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REFERENCES

(1) Chastain, J. B., & Newlin, L. K.: *Rocky Mountain M. J.* **51**:191, 1954. (2) Ross, S., in Welch, H.: Principles and Practice of Antibiotic Therapy, New York, Medical Encyclopedia, Inc., 1954, p. 651. (3) Pisicano, J. C.; Goldzier, S. E., III, & Larkin, V. D.: *J. Pediat.* **44**:534, 1954.

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MILITARY MEDICINE

ORIGINAL ARTICLES

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The One Stage Proctocolectomy with Ileostomy: Experiences at Brooke Army Hospital*

By

LT. COLONEL DONALD G. FAHY, MC† AND COLONEL WARNER F. BOWERS, MC‡

(With 5 illustrations)

INTRODUCTION

THE SURGICAL treatment of patients with ulcerative colitis has undergone marked changes in the last 20 years and has recently come of age. No longer should the internist temporize in the treatment of this disease until the patient is beyond salvage. Aggressiveness has now replaced watchful waiting and once the patient falls within the boundaries of the surgical indications, positive surgical measures can virtually assure a cure and return to health. The complications of ileostomy no longer present the problems of previous years and improvements in anesthesia and surgical techniques with the help of antibiotics have enabled the surgeon to reduce multiple surgical procedures to the irreducible minimum of one operation with a lower mortality than was experienced formerly by staged excisional procedures.

HISTORICAL BACKGROUND

The concept of excisional surgery for ulcerative colitis is not new. The first successful colectomy in the United States was performed by Lilienthal[1] in 1900 for this disease with ileosigmoidostomy. In 1916 Erdmann[2] reported the performance of the same procedure. By 1919 Strauss[3] had done five colectomies. In 1924, Strauss, Friedman and Block[4] submitted one of the very early reports on total removal of the colon and rectum with ileostomy in stages. Subsequently, however, Strauss[3] was content to stop at ileostomy and abdominal colectomy unless removal of the rectum became necessary. By 1944 Strauss and Strauss[5] had done 49 abdominal colectomies with ileostomy in two stages and 11 colectomies including the rectum with ileostomy in two stages. This experience dated from 1915. During this time they found that ileosigmoidostomy rarely achieved success. In 1938, Cave[6] stated that there had been an awakened interest in

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radical surgical measures for ulcerative colitis beginning in 1936. He had done six colectomies and reported that Cattell had done 16 and the Mayo Clinic 40. In 1940, MacGuire[7] recommended total eradication of the colon and rectum in one segment after a previous ileostomy. Lahey[8] reported the first total colectomy, including the rectum, with ileostomy in one stage in 1949. This was done as an emergency procedure for massive hemorrhage. In 1950, Bacon and Trimpi[9] solidified the position of excisional surgery by concluding that cure could not be achieved unless there was total removal of all the large bowel. Subsequently, controversy has developed regarding the number of stages necessary to achieve the final result of permanent ileostomy with eradication of all the large bowel including the rectum. It would seem that the consensus should soon favor the one stage procedure.

Indications for Surgery

There are two indications which make surgery mandatory. These are most frequently pseudopolyposis and more rarely uncontrolled, massive hemorrhage. The presence of pseudopolyps in the colon forecasts the development of malignancy and once they have been demonstrated to be present, operation should be performed within a very few days. It cannot be emphasized too strongly that pseudopolyposis indicates a cancer prone state of the large bowel. Although massive hemorrhage does not occur frequently, when it is present prompt action is necessary. Hemorrhage and perforation are thought to be increased to some extent by the use of cortisone and in this respect its indiscriminate use is not justified. Needless to say, perforation of the colon requires surgical intervention. Intractability, where the patient is incapacitated from the economic or capability standpoint, usually requires surgical intervention although this type of patient may resist a return to gainful activity. Patients with fulminating or progressive disease in spite of intensive conservative measures deserve surgical treatment. Other conditions which may require surgery are anorectal complications, periarticular arthritis and iridocyclitis.

The decision to subject a patient with ulcerative colitis to surgery requires keen judgment and considerable experience. This decision frequently must be arrived at as a result of a joint decision between the surgeon and internist.

Aside from ulcerative colitis, another condition that requires removal of the colon is familial polyposis involving the colon because of its very high malignant potential.

Surgical Procedures

A considerable number of surgical procedures have been used in the treatment of ulcerative colitis and have included cecostomy, appendicostomy, colostomy, ileostomy alone, vagotomy, pelvic neurectomy, colectomy with reestablishment of continuity and total colectomy with permanent ileostomy. The first four procedures can be discarded as inadequate because of frequent exacerbations with a high cost in morbidity and mortality. Vagotomy has been explored by such men as Dennis[10] and Thorek.[11] Their reports appeared hopeful but only early cases would appear to respond. Also, because the colon was left intact, it still maintained its malignant potential. Hinton[12,13] explored the feasibility of pelvic neurectomy but has not reported on further results. Colectomy with reestablishment of continuity implies ileotransverse or ileosigmoid colostomy or anal ileostomy. Anastomosis of the ileum to the colon has been shown to be almost universally doomed to failure. Anal ileostomy has been recommended by Ravitch[14,15] and also used by Schneider.[16] The main troubles consisted of suture line leaks and excoriation of the anal and gluteal skin. This leaves the procedure of choice which is removal of the entire large bowel including the rectum with establishment of a permanent ileostomy. Although removal of the colon and rectum has become generally accepted, considerable controversy remains as to how this can best be accomplished. Several authors[7,5,17-20] have

TABLE 1

EXPERIENCE WITH ONE STAGE ILEOSTOMY, COLECTOMY AND PROCTECTOMY

Surgeon		Date	Cases	Mortality Cases	Cause of Death
Bacon & Trimpi	22	1953	7	0	
Fallis Barron	23	1953	2	0	
Grimes et al.	24	1953	3	2	1 pulmonary edema and endocarditis; 1 fecal fistula
McDonald	25	1953	7	0	
Palumbo & Rugtiv	26	1953	9*	0	
Black & Sholl	27	1954	28	1	Cardiac arrest
Nickel	28	1955	8	1	Leukemia
Scarborough	21	1955	19	0	
Brooke Army Hospital		1952–1956	12*	1	Cortisone induced adrenal failure
Totals			95	5 (or 5.3%)	

Analysis of Deaths—only one, (or 1 per cent), died of causes attributable to the operation. The other four deaths could be attributed to circumstances common to any operation.

* Two cases of familial polyposis, each series.

recommended that the number of stages can be reduced to two from as many as four or five, but they have not been willing to go to a single stage. Scarborough[21] in 1955 recorded his own series of 19 single stage procedures and added 64 other reported cases[22–28] to make a total of 83 reported cases with a mortality attributable to the operation of 1.2 per cent. Since 1953, at Brooke Army Hospital, the single stage procedure has been used. Table 1 shows all of the reported cases including 12 cases from Brooke Army Hospital showing a mortality of 5.3 per cent with only one per cent attributable to the operation itself.

BROOKE ARMY HOSPITAL SERIES

Since 1953, when the first single stage procedure was performed, a total of 12 have been done. Ten of these were for ulcerative colitis and two were done for familial polyposis (Figures 1 and 2). The indications for surgery in order of frequency in the ulcerative colitis cases were pseudopolyposis (Figures 3 and 4) in seven and intractability in three. There was one death in the group resulting from cortisone induced adrenal failure. This was not considered to be due to the operation, per se, but to circumstances that would be associated with surgery of any type. One patient eviscerated on the fifth postoperative day, was closed with interrupted through and through stainless steel wire and subsequently had no diffi-

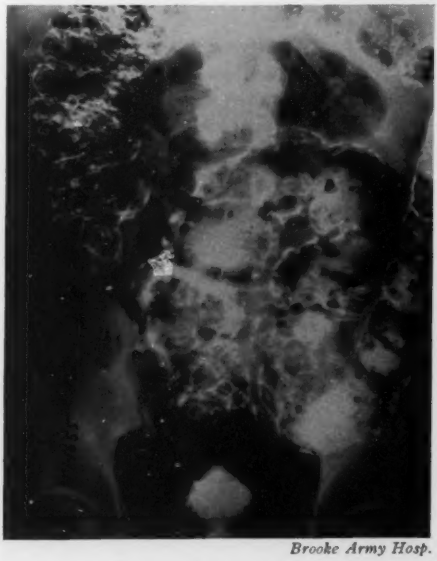

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FIG 1. Barium-air contrast study of the colon showing multiple familial polyps.

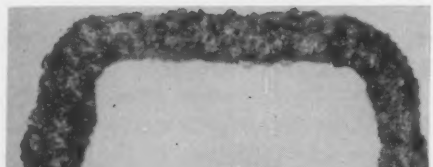

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FIG. 2. Specimen of colon showing familial polyposis removed in a one stage procedure. The small segment removed at the perineal portion of the operation is demarcated by the dotted line.

culty. The other troubles encountered in these patients were all associated with the ileostomy and have been reported previously. In the last seven cases, surgical maturation of the ileostomy was achieved and this has eradicated dysfunction and all its attendant sequelae. It is our firm conviction at Brooke Army Hospital that in the proper hands the procedure of choice for ulcerative colitis and familial polyposis is a single stage removal of the entire colon and rectum with a surgically matured permanent ileostomy.

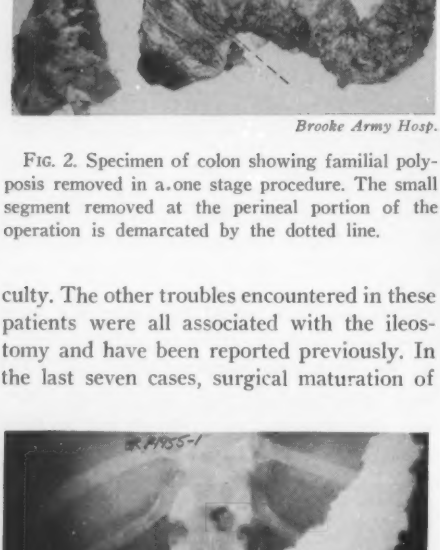

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FIG. 3. Barium study in a patient with ulcerative colitis and pseudopolyposis.

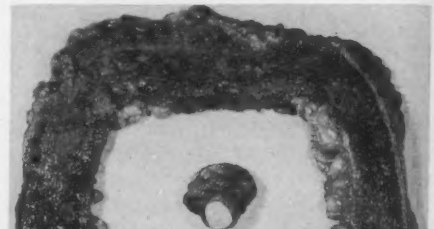

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FIG. 4. Specimen of colon from a patient with ulcerative colitis showing pseudopolyps removed in a one stage procedure. The small rectal segment located in the lower center demonstrates how low the dissection can be taken from the abdominal side making the perineal portion of the procedure relatively simple. The small bit of skin, subcutaneous tissue and fascia in the upper center represent tissue removed in making the defect for the ileostomy.

There are additional facts in the Brooke Army Hospital series that are worth mention. There were three patients with carcinoma all of whom had multiple foci. Two of these had long standing ulcerative colitis of over 12 years. One patient had a two stage procedure in 1952 and four years later had

a known recurrence. The other patient was admitted to the hospital with multiple metastases and died without surgical intervention. The third patient with carcinoma was a 28 year old male with familial polyposis. His original complaint was intestinal obstruction and after a decompressing transverse colostomy, he had a one stage total removal of the colon and rectum with a permanent surgically matured ileostomy and has done well for nine months.

There were two patients who had continuity of their bowel reestablished. The first patient was operated upon at an Army hospital overseas. He had a right hemicolectomy with ileotransverse colostomy. After arriving at Brooke Army Hospital, sigmoidoscopic examination showed the continued presence of ulcerative colitis. Further surgery was recommended but he refused and subsequently met a disposition board and was discharged from the Service. The second patient was a 16 year old white male with a long history of ulcerative colitis with pseudopolpys demonstrated on x-ray. At the time of surgery, sigmoidoscopic examination showed the rectal mucosa to appear relatively normal. Because of the patient's age, his normally appearing rectal mucosa and his probable inability to handle an ileostomy satisfactorily, an abdominal colectomy and a low ileosigmoidostomy were performed. Subsequently, although he has been relatively asymptomatic, he does have persistent disease in his remaining segment and will come to ileostomy and abdominoperineal resection in the near future. This patient also presents another interesting complication. He was hospitalized recently with an episode of pyoderma of the legs.

There have been four patients who have had anorectal troubles in the form of abscesses and fistula. Although these were not the primary indication for surgery, three of these patients were operated upon for intractability with anorectal troubles figuring prominently in the final decision.

It is interesting to note that in addition to the 12 one stage procedures there have been five patients who had staged procedures. One of the patients who had the rectal segment remaining refused further surgery, although she was still symptomatic. She has been lost to follow-up. One patient had a three stage procedure plus five revisions of his classical ileostomy. This patient never did well until his rectum was removed, following which he regained his normal weight. He continued to have recurrent fistulas from his ileostomy into the subcutaneous region and has never been completely well. There were three patients who had two stage procedures. One of these patients had the second stage done two weeks following the first for carcinoma. The other two patients had their second stage approximately six months following the first and did not do well until the second stage had been completed. This is merely further evidence that *in ulcerative colitis, all of the diseased bowel must be removed before recovery can be expected.* This point cannot be too strongly emphasized along with the feeling that the operation can and should be done in one stage. Figure 5 represents a typical surgically matured ileostomy six months postoperatively.

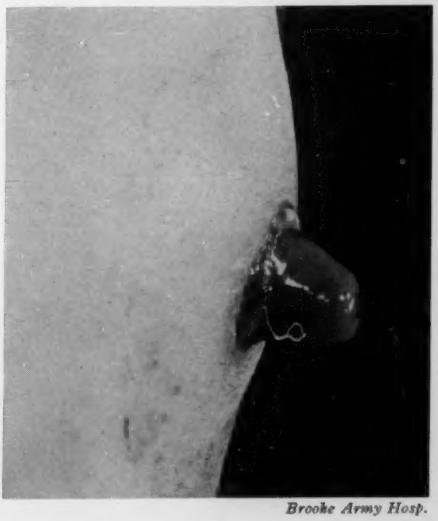

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FIG. 5. A typical surgical matured ileostomy six months postoperatively.

Summary and Conclusions

Ulcerative colitis requires surgical extirpation as soon as pseudopolyps are demonstrated to be present because of the high incidence of carcinomatous degeneration.

Other indications for surgery include severe hemorrhage, perforation, intractability as evidenced by failure of medical management and persistent exacerbations. More unusual indications include arthritis, anal complications (such as abscess and fistula), and iridocyclitis.

Experience at Brooke Army Hospital has shown that patients requiring surgery tolerate a one stage total procedure better than a multiple staged attack in that the recovery is quicker and more complete with fewer complications.

Use of the surgical maturation technic of Turnbull has obviated the previous sequelae incident to ileostomy.

References

[1] Cave, H.: Discussion of The Surgical Treatment of Intractable Ulcerative Colitis by John H. Garlock. Ann. Surg. 113:11-13, Jan. 1941.

[2] Erdmann, J. F.: Discussion of The Surgical Treatment of Intractable Ulcerative Colitis by John H. Garlock. Ann. Surg. 113:13, Jan. 1941.

[3] Strauss, A. S.: Discussion of The Surgical Treatment of Ulcerative Colitis by Richard B. Cattell. J.A.M.A. 104:109, Jan. 1935.

[4] Strauss, A. A., Friedman, J. and Block, L.: Colectomy for Ulcerative Colitis. Surg. Clin. North Amer. 4:667-686, June 1924.

[5] Strauss, A. A.; and Strauss, S. F.: Surgical Treatment of Ulcerative Colitis. Surg. Clin. North Amer. 24:211-224, Feb. 1944.

[6] Cave, H.: Surgical Treatment of Intractable Chronic Ulcerative Colitis. Ann. Surg. 107:806-818, May 1938.

[7] MacGuire, D. P.: Aseptic Total Colectomy. N.Y. State Jour. Med. 40:1515-1518, Oct. 1940.

[8] Lahey, F. H.: Reflections on Ulcerative Colitis. Gastroenterology 12:518-519, Mar. 1949.

[9] Bacon, H. E. and Trimpi, H. D.: The Selection of an Operative Procedure for Patients with Medically Intractable Ulcerative Colitis. Surg., Gynec. and Obstet. 91:409-420, Oct. 1950.

[10] Dennis, C. A.: The Response to Vagotomy in Idiopathic Ulcerative Colitis and Regional Enteritis. Ann. Surg. 128:479-496, Sep. 1948.

[11] Thorek, P.: Vagotomy for Chronic Nonspecific Ulcerative Colitis, J. Internat. Coll. Surg. 11:578-581, Nov.-Dec. 1948.

[12] Hinton, J. W.: The Surgical Management of Ileocolitis. Bull. N.Y. Acad.-Med. 28:714-750, Nov. 1952.

[13] Shafiroff, B. G. P. and Hinton, J. W.: Denervation of Pelvic Colon for Ulcerative Colitis. Surgical Forum, W. B. Saunders Co., Phila., 1950, pp. 134-139.

[14] Ravitch, M. M.: Total Colectomy in One Stage. Surg. Clin. North Amer. 34:509-522, Apr. 1954.

[15] Ravitch, M. M. and Sabiston, D. C.: Anal Ileostomy with Preservation of the Sphincter. Surg., Gynec. and Obstet. 84:1095-1099, June 1947.

[16] Schneider, S.: Anal Ileostomy. A.M.A. Arch. Surg. 70:539-544, Apr. 1955.

[17] Cattell, R. B.: Indications for Colectomy in Ulcerative Colitis. Surg. Clin. North Amer. 24:656-660, June 1944.

[18] Cattell, R. B.: Technic of Total Colectomy for Ulcerative Colitis. Surg. Clin. North Amer. 24: 661-674, June 1944.

[19] Dennis, C. A.: Surgical Management of Ulcerative Colitis. Staff Meeting Bull, Hospitals of U. of Minnesota, XV:388-400, 1944.

[20] Miller, G. G., Gardner, C. M. and Ripstein, C. B.: Primary Resection of the Colon in Ulcerative Colitis. Canad. Med. Assoc. Jour. 60:584-585, June 1949.

[21] Scarborough, R. A.: Surgical Treatment of Chronic Ulcerative Colitis. Amer. Jour. Surg. 89: 1224-1229, June 1955.

[22] Bacon, H. E. and Trimpi, H. D.: The Surgical Management of Ulcerative Colitis. J.A.M.A. 153: 1249-1253, Dec. 1953.

[23] Fallis, L. S. and Barron, J.: A Modified Technique for Total Colectomy in Ulcerative Colitis. A.M.A. Arch. Surg. 67:363-369 Sep. 1953.

[24] Grimes, O. F., Boudares, P., Crane, J. T. and Goldman, L.: The Surgical Treatment of Ulcerative Colitis. Amer. Jour. Surg. 90:228-236, Aug. 1955.

[25] McDonald, O. G.: Discussion of article Modified Technique for Total Colectomy in Ulcerative Colitis by Laurence S. Fallis and James Barron. A.M.A. Arch. Surg. 67:363-369.

[26] Palumbo, L. T. and Rugtiv, G. M.: One Stage Total Colectomy, Including Abdominoperineal Resection with Primary Ileostomy. A.M.A. Arch. Surg. 67:762-768, Nov. 1953.

[27] Black, B. M. and Sholl, P. R.: Surgical Treatment of Chronic Ulcerative Colitis. A.M.A. Arch. Surg. 68:454-462, Apr. 1954.

[28] Nickel, W. F.: Combined Operative Procedures for Ulcerative Colitis. Surg., Gynec. and Obstet. 101:353-358, Sep. 1955.

Surgically Matured Ileostomies and Colostomies: Experiences at Brooke Army Hospital*

By

Lt. Colonel Donald G. Fahy, MC,† and Colonel Warner F. Bowers, MC‡

IT IS only within recent years that the ileostomy problem has approached any degree of resolution. Previously, ileostomy has been misused, abused, misunderstood and grossly condemned. Because of such circumstances the ileostomy patient has been subject to a difficult existence, at times worse than the original disease. In hindsight, it is remarkable that forty years should elapse from the first clearcut description of the ileostomy in 1913 by John Young Brown[1] to the first factual description of ileostomy maturation and dysfunction which was published in 1953 by Turnbull.[2] And yet, the fact remains that only since then has an understanding of this problem been achieved sufficient to allow the performance of this procedure, in association with colectomy, with virtual assurance of success. Categorically, where indicated for ulcerative colitis or polyposis of the colon, ileostomy is useless unless used in conjunction with additional extirpative measures.

General Considerations

There is little doubt that the present knowledge of ileostomy would not be available to us without the many and frequently futile efforts of our predecessors. Certainly the complications of ileostomy were well documented such as prolapse, retraction, skin irritation and erosion, fistula formation, obstruction, and fluid and electrolyte derangements. In 1941, Garlock[3] indicated that placement of sutures between the mesentery of the ileum and the parietal peritoneum would prevent prolapse and retraction and this has proved to be true. The skin erosion problem was attacked successfully in 1936 when the Koenig-Rutzen appliance was devised and used.[4] In 1951 Warren and McKittrick[5] emphasized that careful performance of the ileostomy was mandatory for prevention of fistula formation and that no stitches should ever be placed in the ileum itself. Although Bartels[6] in 1946 made one of the early references to dysfunction, Warren and McKittrick[5] were among the first to realize that dysfunction rather than the ileostomy itself was the cause of difficulties such as obstruction and fluid and electrolyte problems. It remained then for Turnbull[2] to classify dysfunction from the standpoint of reasons for its occurrence, manifestations and methods of successful treatment. These methods also have been used with colostomies at Brooke Army Hospital. Although surgical maturation does not play the important role in colostomy that it does in ileostomy, it does make a better functioning colostomy and a better final result. Figure 1 is a graphic illustration of the difference surgical maturation produces. This patient had a widely diverting transverse colostomy performed for inoperable carcinoma of the large bowel at the splenic flexure. The proximal stoma was surgically matured and the distal stoma was merely exteriorized. One can readily see the reaction present in the distal stoma compared to the proximal stoma. This is the same reaction that produces the dysfunction in the ileostomy with all its attendant sequelae and which surgical maturation eradicates.

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*An abridgement of a portion of the material submitted by Lt. Coloney Fahy as a thesis for the Master of Science Degree in Surgery from The Graduate School, Baylor University.

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FIG. 1. A widely diverting colostomy in a patient with inoperable carcinoma of the splenic flexure with the proximal stoma surgically matured. The distal stoma in the midline shows the severe peritoneal reaction that also occurs 14 days postoperatively in classical ileostomy.

TECHNICAL CONSIDERATION

The original description of the classical ileostomy was recorded in 1913.[1] This was a single barrel, end or transverse type of ileostomy and is still used today with modifications. Although it was adopted and used, it was always feared because of a high mortality rate and other complications of ulcerative colitis that were attributed to ileostomy rather than to an advanced stage of the disease. Its proper evaluation was never achieved until these other factors in association with ulcerative colitis were better understood. The fact that ileostomy troubles were recognized was evidenced by the introduction of split thickness skin grafting of the ileostomy in 1941 by Dragstedt.[7] This was taken up by Black and Sholl[8] who in 1954 reported on 80 cases. Although 72 patients eventually achieved a satisfactory stoma, the difficulties were considerable. A modification of this was advanced by Wells[9] in 1952 when he advocated the use of a full thickness pedicle graft on the top side of the ileostomy with a split thickness graft to the underside. He appeared pleased with his results but this method has not been generally used. Turnbull[2] in 1953 recommended that a mucosal graft of the terminal half of the ileostomy be fashioned one week postoperatively and sutured to the skin. One year later he and Crile[10] recommended that this method be used at the original operation and the ileostomy appliance, as had been recommended earlier, be applied at that time using Dermaguard* to seal the defect between the ileostomy and the appliance. These authors reported on two series of patients, one having classical ileostomy and the other the immediate mucosal graft. The superiority of the latter group was demonstrated by disappearance of dysfunction and its associated fluid and electrolyte problems. Previously in 1952, Brooke[11] in England described complete eversion of the ileac stoma at the time of the operation. He did not, however, emphasize the physiological role of the eversion in prevention of dysfunction. After the appearance of Turnbull's paper and an attempt at one mucosal graft which was successful it was felt, at Brooke Army Hospital, that the Brooke procedure would be simpler to perform and yet achieve the same result. Accordingly, this has been used since and has been designated "Full Thickness Eversion" (Figure 2).

BROOKE ARMY HOSPITAL SERIES

During the four years from July 1952 to June 1956, thirteen ileostomies in association with colectomy have been performed at Brooke Army Hospital. There were two classical ileostomies, five with skin graft, and six which were surgically matured. The results are tabulated in Table 1. All the complications occurred in the classical and skin grafted groups. The successful classical ile-

* Manufactured by the John F. Greer Company, Oakland, Calif.

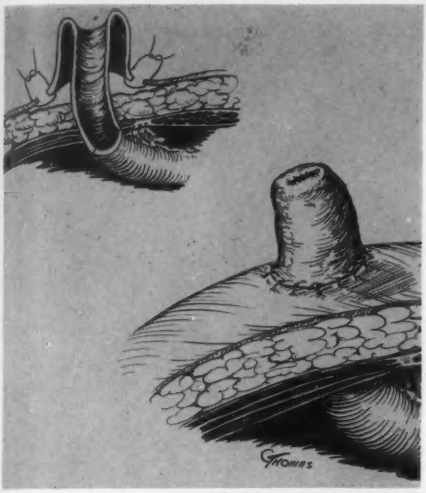

FIG. 2. Method of producing full thickness eversion of the ileum in achieving surgical maturation.

ostomy was our first attempt at surgical maturation to be performed one week postoperatively but it was short and matured by itself very quickly. Two years postoperatively, this patient continues to do well and by x-ray study shows no pre-stomal dilatation. In accordance with the report of Fleischner, Banks and Mandelstam[12] who showed that patients with normally functioning ileostomies did not have a dilated pre-stomal loop on x-ray study, this indicates a successful ileostomy. The other patient with classical ileostomy required five revisions because of fistula formation and had a recurrence of the fistula after each revision with resulting abdominal wall, burrowing abscesses which remain uncontrolled. In the skin grafted group, only one patient of five has continued without difficulty and is now in her fourth postoperative year. Of the other four, one died immediately postoperatively of cortisone induced adrenal failure, one has his skin grafted stoma intact but has had three further hospitalizations for small bowel obstruction during his three postoperative years, one had moderately severe dysfunction which persisted for one year when he developed gangrene of the stoma requiring revision of the ileostomy leaving it flush with the skin level which has functioned well in the subsequent three years, and one patient has had persistent dysfunction with perforation requiring revi-

TABLE 1

TABULATION OF RESULTS OF THIRTEEN ILEOSTOMIES
BROOKE ARMY HOSPITAL

1952–1956 Type Ileostomy	Number of Ileostomies	Dysfunction	Fistula	Retraction	Prolapse	Fluid & Electrolyte Problems	Small Bowel Obstruction	Gangrene of Ileostomy	Revision	Immediate Good Result	Eventual Satisfactory Result	Years Followed	Died	Remarks
Classical	2	1	1	0	0	1	0	0	1 x5	1	1	2–4	0	One patient—recurrent subcutaneous fistula with abdominal wall abscess.
Skin grafted	5	4	0	0	0	3	3	1	2	1	4	3–4	1	One patient died—cortisone induced adrenal failure
Surgically Matured	6	0	0	0	0	0	0	0	0	6	too recent	less than 1 yr.	0	One patient eviscerated 5th day; closed with wire, recovered satisfactorily

FIG. 3. Dilated pre-stomal loop in a patient with persistent stomal obstruction two years postoperatively requiring the constant use of a catheter.

FIG. 4. Normal pre-stomal loop seen in a patient with surgical maturation, six months postoperatively.

sion and finally permanent use of a #28 soft rubber right angle catheter maintained in place by an inflatable cuff. With the catheter in place, the patient does well but she cannot go without it and her pre-stomal study continues to show dilatations (Figure 3). Of the six patients who have had surgical maturation of the ileostomy, two were operated upon for familial polyposis and four for ulcerative colitis. None have had any ileostomy troubles. All have been done in the past year, the oldest having been performed just one year ago. X-ray studies of the pre-stomal region in all of these cases have shown no dilatation (Figure 4).

SUMMARY AND CONCLUSIONS

The proper use of ileostomy is in association with extirpation of the colon and should not be used by itself in treatment of such diseases as ulcerative colitis and familial polyposis.

The concept of ileostomy dysfunction is now well documented and well understood.

The complications of ileostomy including obstruction and fluid and electrolyte difficulties are all due to ileostomy dysfunction, not to the ileostomy itself.

Surgical maturation of an ileostomy or colostomy at the time of operation is the procedure of choice whether it be the mucosal graft of Crile and Turnbull or the full thickness eversion of Brooke as utilized at Brooke Army Hospital.

REFERENCES

[1] Brown, J. Y.: The Value of Complete Physiological Rest of the Large Bowel in the Treatment of Certain Ulcerative and Obstructive Lesions of this Organ. Surg., Gynec. and Obstet. 16:613, 1913.

[2] Turnbull, R. B.: Management of the Ileostomy. Am. Jour. Surg. 86:617, 1953.

[3] Garlock, J. H.: The Surgical Treatment of Intractable Ulcerative Colitis. Ann. Surg. 113:2, 1941.

[4] Strauss, A. A. and Strauss, S. F.: Surgical Treatment of Ulcerative Colitis; Surg. Clin. No. Amer. 24:211, 1944.

[5] Warren, R. and McKittrick, L. E.: Ileostomy

for Ulcerative Colitis. Surg., Gynec. and Obstet. 93:555, 1951.

[6] Bartels, E. C.: Anuria and Uremia Following Surgery of the Right Colon. Surg. Clin. No. Amer. 26:628, 1946.

[7] Dragstedt, L. R., Dack, S. M. and Kirsner, J. B.: Chronic Ulcerative Colitis. Ann. Surg. 114:653, 1941.

[8] Black, B. M. and Sholl, P. R.: Surgical Treatment of Chronic Ulcerative Colitis. A.M.A. Arch. Surg. 68:454, 1954.

[9] Wells, C. A.: A Skin-covered "Spout" Ileostomy. Brit. Jour. Surg. 39:309, 1951-1952.

[10] Crile, G. and Turnbull, R. B.: The Mechanism and Prevention of Ileostomy Dysfunction. Ann. Surg. 140:459, 1954.

[11] Brooke, R. N.: Management of Ileostomy Including its Complications. Lancet 2:102, 1952.

[12] Fleischner, F. G.; Mandelstam, P. and Banks, B. M.; Roentgen Observations of Ileostomy Patients with Idiopathic Ulcerative Colitis. Radiology 63:74, 1954.

"There is all the difference in the world between duty and duties. Duty is a noble word and signifies the discharge of an unwritten debt of honour, something which you are bound to perform, something which reaches spiritual heights; duties are things we ought to perform and often do not: for example, a University professor may perform his duties ill, well or just middling. . . . In doctoring you cannot discharge your duty (singular) to your patients on a forty-hour week basis."

SIR GORDON BELL: from his address at the Univ. of Otago, December 1954

An Evaluation of the Mechanical Treatment of Snake Bite*

By

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Rabbits (84) were injected with Crotalus adamanteus venom (approx 4 mg/kg body wt) and treated in four different ways: immobilization; immobilization and tourniquet; immobilization, incision and suction; and simple return to cage. Results indicate rabbits live longest when immobilization with or without tourniquet is used; the use of incision and suction with immobilization shortens the time to death and is contraindicated. Rabbits injected and returned to cages immediately lived the shortest length of time and served as experimental blanks.

INTRODUCTION

IN THIS country the commonly accepted first aid treatment for snake bite is the tourniquet-incision and suction method of Crimmins and Jackson,[1] even though evidence supporting the effectiveness of this treatment is not too convincing. In other parts of the world, where snake bite is an acute problem, the method has been condemned as useless or even contraindicated.[2,3] After making a study[4] of snake bite kits, per se, it was evident that the method of treatment itself should be studied to determine whether it possessed reliability or effectiveness.

METHOD

Rabbits were selected as the experimental animal after a consideration of size, docility, and cost. Crotalus adamanteus venom was chosen as being a good representative venom for experimentation. The number of mouse LD_{50}'s per mg of desiccated venom ranges from 8 for Agkistrodon mokasen to 50 for Crotalus viridis; C. adamanteus venom ranges from 30 to 35 mouse LD_{50}'s/mg.[5] The dried venom possesses about the same potency from lot to lot and is easily handled; it is also stable for quite some time under refrigeration.

A convenient dosage rate was established by injecting various known amounts of venom into rabbits and observing the time necessary for death to result when no treatment was administered. The effect of treatment on the time required for the rabbit to die following injection was taken as an index of the effectiveness of the treatment. No hospital type treatment such as transfusion was attempted.

MATERIALS

a. Standard snake bite kits as sold by various manufacturers;
b. Rectangular frames 18″ × 32″ made of 1″ × 4″ lumber, screw eyes were placed in each corner of the frames;
c. Rabbits: mixed color, mixed sex, wt 1.5 to 4.4 kg, aged 3 to 8 months;
d. Venom: Desiccated C. adamanteus. Ross Allen's Reptile Institute, Silver Springs, Florida;
e. One cc tuberculin syringes with 23 gauge, ¾″ needles;
f. Razor blades and holder.

* This work is not to be construed as necessarily reflecting the views of the Department of the Navy.

† Department of Chemistry, Naval Medical Field Research Laboratory, Camp Lejeune, North Carolina.

Procedure

Venom solution was prepared, immediately before use, by suspending 100 mg of dried venom in 5 ml of distilled water. This gave an opalescent solution containing 20 mg/ml.

A series of rabbits was injected with 2, 4, 5, 6 and 8 mg of venom/kg body wt. These were treated in the same fashion as the blanks (see No. 1 below). The time interval between injection and death was noted. From this an optimum dosage range was established.

Eighty-four rabbits were divided into four groups according to treatment. Each rabbit was injected intramuscularly, in the left thigh, with 4 to 6 mg of venom/kg body wt. The groups were treated as follows:

1. BLANKS. Twenty rabbits were injected. They were returned to their cages with free access to food and water and without further treatment. The interval between injection and death was recorded.

2. CONTROLS. Twenty-four rabbits were immobilized, spread-eagled, in a supine position, by tying a leg to each corner of a frame. They were then injected. Four hours after injection they were removed from the frames and returned to the cages with food and water *ad lib.* The interval from injection to death was recorded.

3. TOURNIQUET. Eighteen rabbits were immobilized in the same fashion as the controls. A tourniquet was placed loosely in position high on the left thigh. Each rabbit was then injected. One minute after injection the tourniquet was tightened with enough pressure to restrict venous flow but not enough to stop arterial flow. Four hours after injection the tourniquets were removed, the rabbits were removed from the frames and returned to the cages with food and water *ad lib.* The interval from injection to death was recorded.

4. INCISION AND SUCTION. Twenty-two rabbits were immobilized in the same fashion as were the controls. The inner side of the left thighs were clipped and shaved. Each rabbit was then injected. One minute after injection a cut was made, with the lancet provided in a snake bite kit, over the site of injection and in line with the path of the needle, ¼″ in depth and ½″ in length. Suction was then applied immediately with a pump from a kit. Suction was maintained for fifteen minutes. Four hours after injection the rabbits were removed from the frames and returned to the cages with food and water *ad lib.* The interval from injection to death was recorded.

Table 1

Mean Interval to Death and Standard Deviation

Group	Mean	Standard Deviation
Blanks	188 minutes	± 81 minutes
Controls	517 minutes	±134 minutes
Tourniquet	511 minutes	±180 minutes
Incision and Suction	375 minutes	±131 minutes

Results

Half of the rabbits receiving a dose of 2 mg/kg body wt survived. The interval from injection to death decreased with an increase in dosage up to the level of 4-5 mg/kg. Increasing the dose above this level did not further decrease the survival time. The optimum lethal dose was taken as 4-5 mg/kg. The LD_{50} is probably in the vicinity of 2 mg/kg. Billing[6] gives the MLD for C. adamanteus venom in rabbits as 0.4 mg/kg.

The mean interval to death and standard deviation for each group is given in Table 1. The groups were compared by the application of Student's "t" test. The resulting values are tabulated in Table 2.

Discussion

It is evident that these experiments did not follow the standard method of tourniquet-incision and suction. The sole purpose of these experiments was to demonstrate under the condition of restricted lymph flow, brought about by immobilization of the

TABLE 2

SIGNIFICANCE OF DIFFERENCE BETWEEN RABBIT GROUPS INJECTED WITH *Crotalus adamanteus* VENOM

Blanks	10.26_{40}	7.49_{34}	5.95_{38}	No Immobilization
	Controls	0.23_{38}	3.46_{42}	All immobilized for four hours
		Tourniquet	2.62_{36}	All immobilized for four hours
			Incision and Suction	All immobilized for four hours

The subscript numerals are degrees of freedom. Only controls vs. tourniquet ($t = 0.23$) are the same. All other combinations differ significantly.

animal, whether suction removes enough venom to allow the animal to survive for a longer period of time than it would without the suction. With accurate knowledge of where the venom was injected, where to incise to hit any so called "venom pocket," and 15 minutes of suction on a shaved site, there was not enough venom removed to allow the animal to live any longer than without the suction. In fact, the pumping and manipulation apparently produced faster venom spread and the animals died more rapidly.

The use of a tourniquet does not change the time to death if the animal is immobilized. In actual first aid a tourniquet may be substituted for immobilization and serve to slow the spread of venom. These experiments were not designed to show anything on this point, inasmuch as no way was found to keep a tourniquet in place on a freely moving rabbit. It was observed that animals with tourniquets had much more local leg damage than did the controls. This damage was not critically compared so no definite conclusions are justified from this observation.

CONCLUSIONS

1. Immobilization appears to be helpful in the treatment of snake bite.

2. The tourniquet apparently does not increase or decrease survival time over that of immobilization.

3. Incision and suction not only fails to aid but in fact decreases the survival period.

REFERENCES

[1] Jackson, D., and Crimmins, M. L.: First-aid Treatment of Snake Bite. Texas State J. Med. 23: 198-209 (July) 1927.

[2] Purananda, C.: Treatment of Snakebite Cases in Bangkok. Venoms, Symposium Volume, American Association for the Advancement of Science. edited by E. Buckley and N. Porges, Washingon, D.C., 1956, page 353.

[3] Ahuja, M. L., and Sigh, G.: Snakebite in India. Venoms, Symposium Volume, American Association for the Advancement of Science, edited by E. Buckley and N. Porges, Washington, D.C., 1956, pp. 341-351.

[4] Galloway, C. B., and Kathan, R. H.: Evaluation of Snake Bite Kit, Suction, SN 9-525-325. Naval Medical Field Research Laboratory Report to Field Branch, Bureau of Medicine and Surgery, 22 Oct. 1952.

[5] Criley, B. R.: Development of a Multivalent Antivenin for the Family Crotalidae. Venoms, Symposium Volume, American Association for the Advancement of Science, edited by E. Buckley and N. Porges, Washington, D.C., 1956, pp. 373-380.

[6] Billing, W. McG.: The Action of the Toxin of Crotalus adamanteus on Blood Clotting. J. Pharmacol. and Exper. Therap. 38:173-196, 1930.

The Wholesomeness of Irradiated Food and Its Military Implications*

By

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AND

Colonel Tyron E. Huber, MC, *U. S. Army*‡

(With 3 illustrations)

PERISHABLE but highly acceptable foods greatly contribute to the improved performance, health, and morale of military personnel, as was amply demonstrated in Korea and during the two World Wars. Despite this experience, it has not been feasible in the military establishment to supply large amounts of perishable subsistence to soldiers stationed in overseas Theatres of Operation.

The advent of canned and dehydrated ration items occurred during World War II. Although these items can withstand long periods of unrefrigerated storage and are economical to transport, handle and issue, the present day thermal or dehydration processing procedures make certain vegetable products and meat items to be less acceptable to the troops than the comparable fresh items.

With the development of destructive nuclear weapons, increasing quantities of spent fuel rods from atomic reactors have become available. Accordingly, during the post-World War II era, an entirely new concept of preservation of foods, employing ionizing radiation, was developed. The utilization of wastes from atomic reactors, mixed fission products or single radioactive elements such as cobalt-60 for radiation preservation of food represents an important advance in the peaceful uses of nuclear energy and offers the following advantages in the supply and conservation of perishable subsistence:

(1) conservation of the supply of potatoes and onions by inhibition of sprouting, (2) conservation of cereal products by destruction of insect infestations, (3) destruction of the trichina parasite in pork, and (4) extension of shelf life of fresh vegetables and meats without refrigeration.

Food-spoilage bacteria can be destroyed with beta or gamma radiation and since sterilization of a food item can be accomplished with only a small rise in temperature, amounting at most to no more than 10° C. This method has been termed "cold sterilization." Thus an irradiated food, for example fresh meat, remains essentially fresh, retains color and sustains few of the structural impairments caused by heat sterilization. Therefore, it may be possible in the near future to supply to combat troops perishable food items which have been sealed in plastic packets or metal containers and sterilized by beta or gamma radiation. By this same radiation-sterilization process, a suitable "in flight" ration could be made available to Air Force units.

In 1954, the Department of the Army initiated, supported, and coordinated a broad program of research relating to radiation preservation of food. Approximately 47 university research groups, as well as the Quartermaster Food and Container Institute for the Armed Forces, Chicago, Illinois, and the Medical Nutrition Laboratory, Fitzsimons Army Hospital, Denver, Colorado, are now participating in this research and development program. The Quartermaster General

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‡ Research and Development Division, Office of The Surgeon General, Department of the Army, Washington 25, D.C.

has been responsible for the technological developments of the process, whereas The Surgeon General has been charged with the task of determining whether irradiated foods may be fed safely to humans. The Food and Drug Administration of the Department of Health, Education, and Welfare has collaborated in formulating the design of the animal experiments relating to the toxicity studies. In addition, the Department of Agriculture as well as the National Cancer Institute, National Institutes of Health of the U. S. Public Health Service, Department of Health, Education, and Welfare, has provided consulting services to the Surgeon General of the Army. Although it is unlikely that toxic degradation products may be produced from the alteration in the chemical structures of irradiated foods, it must be demonstrated that foods prserved in this manner are non-toxic, safe for human consumption, and also of nutritional value equal to that of foods preserved by the conventional methods of canning or dehydration.

The wholesomeness studies have been directed along two major lines of approach: (1) potential toxicity, and (2) nutritional adequacy. It must be established through extensive toxicity testing that the irradiated food-product is free from induced radioactivity, toxic by-products, and carcinogenic agents. To completely evaluate toxicity and nutritional adequacy, various species of animals, such as the rat, mouse, dog, monkey and chicken, were utilized in this testing program.

In the feeding experiments with experimental animals, observations are usually made on growth, reproduction, food consumption, lactational performance, and longevity or survival time. To supplement these observations, it is desirable to include in the experimental plan a measure of cellular metabolism such as enzyme analyses of tissues of the animals fed the irradiated diets.

Induced Radioactivity

Peterson and co-workers[11] reported that after an atomic explosion, food in unbroken containers would be safe for human consumption. Meinke[10] demonstrated that there was no detectable amount of radioactivity in 24 elements commonly present in food which had been irradiated with a kilocurie cobalt-60 source. Although the level of radiation used thus far involved beam energies considerably below 10 Mev, several investigators are studying the possibility that fast electrons with beam energies beyond this level might induce measurable amounts of radioactivity. However, from the information currently available, it would appear that radiation processing of foods does not induce radioactivity.

Toxicity Studies with Experimental Animals and Human Test Subjects

One of the earliest feeding experiments on irradiated foods was conducted by DaCosta and Levenson in 1951[5] at the Medical Nutrition Laboratory. Their investigations concerned the effect of feeding a beta-irradiated synthetic ration to male and female weanling rats. They found no deleterious effect on growth but did note that there was an impairment in the fertility of the male and an increased mortality in litters, which they believed was due to vitamin E destruction. These findings were later confirmed by the Swift and Company Research Laboratories[12] in their studies on feeding of irradiated ground beef to rats. Vitamin E supplementation of the diet corrected the problems of male infertility and decreased viability of young.

Short-term feeding experiments on irradiated foods initiated early in 1954 by The Surgeon General of the Army were designed for securing toxicity clearance on a wide spectrum of irradiated foods to permit testing by a palatability panel at the Quartermaster Food and Container Institute, as well as to permit the testing of these foods on human volunteers on the metabolic ward of the Medical Nutrition Laboratory. Forty irradiated foods have been cleared by these short-term (8-week) feeding tests and, on the basis of similarity in composition and

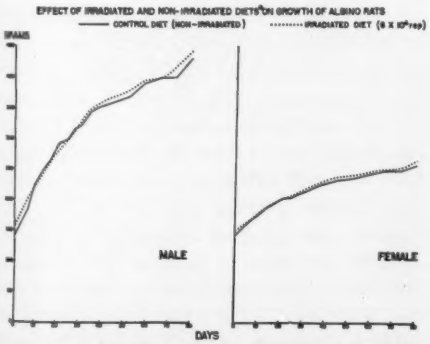
type, an additional sixty-nine foods have been cleared for palatability panel evaluation.

In other laboratories no toxic effects have been demonstrated in the long-term feeding experiments on irradiated butterfat,[7] organ meats,[4] dried whole eggs,[14] and beef.[2]

A completely irradiated diet composed entirely of nine irradiated foods and compounded to provide the proper levels of fat, protein, and carbohydrate is being fed to rats in a 2-year experiment at the Medical Nutrition Laboratory. No adverse effects from feeding this completely irradiated diet through the first two generations have been demonstrated (Fig. 1).

A ration consisting of irradiated ground beef comprising 50 percent of the total calories of the diet has been fed to dogs for approximately 13 months without any adverse effects on growth or other evidence of toxicity.[8] An irradiated ration has also been fed to chickens for 56 weeks with no deleterious effect on growth, reproduction, or food consumption.[3]

Investigations are currently being conducted at the Wisconsin Alumni Research Foundation[15] to determine whether irradiation of sterol-containing extracts of egg, yeast, and pork will induce spontaneous tumor formation in rats and mice when injected, fed, or painted on the skin of the test animal. Thus far, there has been no evidence



Medical Nutrition Lab., Fitzsimons Army Hosp.

FIG. 1

* Diet compounded from nine individually tested food items plus untreated vitamins.

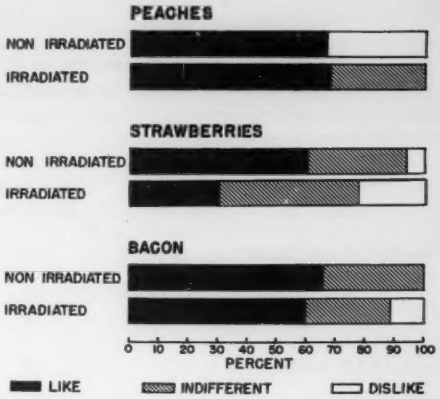


FIG. 2. Acceptability of typical irradiated and non-irradiated foods. Percentage distribution of ratings by human volunteers.

that irradiated food products are carcinogenic.

The irradiated foods previously tested on experimental animals have also been fed for periods of 30 days to 10 human volunteers at the Medical Nutrition Laboratory. These foods have been fed at levels of 35, 65, 80, and 100 percent of the total calories in the diet. No untoward effects have been observed, and the human volunteers have indicated, with only a few exceptions, equal acceptance of non-irradiated and irradiated foods (Figure 2).

Effect on Life Span

There is a paucity of available information concerning whether feeding of irradiated foods affects the longevity of experimental animals. However, the feeding of irradiated ground beef and raw beef to rats for four successive generations or for two years[12] has demonstrated that the average survival time for the rats on the unprocessed beef ration exceeded that for the animals on the irradiated beef product (Table 1). Similar experiments conducted by Brownell and coworkers[2] using a heat-processed beef and an irradiated heat-processed beef fed at 50 percent level (dry basis) in the diet to rats demonstrated that the survival time of the animals on the radiation sterilized beef was

TABLE 1

SUMMARY OF DATA ON MORTALITY AND LIFE SPAN OF RATS RAISED ON DIETS CONTAINING IRRADIATED OR NON-IRRADIATED BEEF

(60 Percent of Total Calories)

	Males		Females	
	Non-Irradiated Beef	Irradiated Beef	Non-Irradiated Beef	Irradiated Beef
Number of rats started	40	40	40	40
Deaths during Experiment:				
a. 0– 30 weeks	0	1	0	0
b. 31– 52 weeks	0	3	1	1
c. 53– 78 weeks	8	7	0	7
d. 79–104 weeks	17	12	12	13
Total	25	23	13	21
Animals Sacrificed during Experiments*	10	10	10	10
Animals Surviving at end of 104 weeks	5	7	11	9
Average days survival (on experiment) and standard error†	614±18.8	581±24.9	685±14.7	612±21.8

* Random selection at specified intervals for histopathological examination (not included in life span calculation).

† Potential life span limited experimentally to 728 days (2 years). Life span of experimental animals was significantly shorter for both sexes ($P < 0.05$).

(Privately sponsored research, Courtesy of Swift and Company Research Laboratories.)

essentially the same as that for animals on a heat-sterilized product (Table 2).

NUTRITIONAL ADEQUACY

It is obvious that the nutritive quality of radiation-processed foods should be similar or excel the nutritional adequacy of unprocessed and heat-sterilized foods. In such an evaluation, the biochemical effects of ionizing radiations on the macronutrients (fat, carbohydrate, and protein) and the micronutrients (vitamins) are determined.

The irradiation of fat, similar to natural oxidation, produces peroxides. Fats that have been irradiated extensively so as to produce peroxide values of 400 to 1200 are toxic when fed to rats.[9] However, fats treated at the sterilization dose of 3 million rep (roentgen equivalent physical) have peroxide values below 100, usually in the range of 70 to 80 and Mead and coworkers[9] demonstrated that rats tolerate fats with peroxide values below 100 with no toxic effect. Hence, fats treated with a 3 million rep dose are not believed to be toxic.

Radiation induced changes in protein quality are under investigation by Johnson and collaborators.[6] A slight loss of nutritive value has been observed following the irradiation of several meat and vegetable proteins (Table 3). It has been demonstrated by Johnson[6] that the biological value of milk protein was reduced by heat treatment and by irradiation. Radiation processing of milk produces a significant loss of cystine, a limiting amino acid in milk. However, in the case of lima bean protein, both heat and irradiation treatment increase the biological value, heat treatment being the more effective. The significantly greater increase in the biological value of lima bean protein effected by heat treatment, in contrast with radiation treatment, can be explained on the basis that the destruction of a proteolytic enzyme inhibitor (present in lima beans) is much greater by thermal than by radiation processing.

Within the past year, additional data has

TABLE 2

SUMMARY OF DATA ON MORTALITY AND LIFE SPAN OF RATS RAISED ON DIET CONTAINING 50 PERCENT IRRADIATED HEAT PROCESSED OR NON-IRRADIATED HEAT PROCESSED BEEF

	Males		Females	
	Non-Irradiated Beef	Irradiated Beef	Non-Irradiated Beef	Irradiated Beef
Number of rats started	31	31	31	31
Deaths during experiment:				
a. 0– 32 weeks	0	1	0	0
b. 0– 64 weeks	3	3	2	3
c. 65– 81 weeks	6	4	5	2
d. 82–104 weeks	13	15	12	9
Total	22	22	19	14
Animals surviving at 104 weeks	9	9	12	17
Average weeks survival* (on experiment) and standard error	90.7±13.8	93.0±13.4	92.2±12.9	94.7±13.6

* Potential life span limited experimentally to 104 weeks (2 years). No significant difference between life span of animals raised on irradiated heat processed beef and non-irradiated heat processed beef.
(Courtesy of Dr. L. E. Brownell, University of Michigan.)

been obtained regarding the effect of irradiation on the fat- and water-soluble vitamins in foods.[1,13,16] It has been observed that the amount of vitamin destruction varies between different food items suggesting that natural protectors for some vitamins do occur. In general, the destruction is less than that resulting from heat sterilization. Thiamine suffers the greatest destruction from radiation sterilization, of the order of 65 percent at 3 million rep, a value comparable to the destruction resulting from current commercial food preserving techniques (Fig. 3). The pyridoxine content in radiation sterilized beef has been shown to be reduced by 25 percent, whereas the reduction of pyridoxine in heat-processed beef is reported to be 30 percent. Riboflavin and niacin are rela-

TABLE 3

COMPARISON OF METHODS OF FOOD PROCESSING ON BIOLOGICAL VALUE OF MEAT, MILK, LIMA BEAN, AND PEA PROTEINS

Food	Biological Value (Percent)†		
	Raw	Heat Sterilized	Radiation Sterilized
Meat	77.99	—	78.59
Milk	89.52*	84.26	81.76
Peas	59.00	58.00	50.00
Lima Beans	44.00	64.00	50.00

* Liquid Condensed Milk.

† Biological Value = $\frac{\text{Nitrogen Utilized}}{\text{Nitrogen Absorbed}} \times 100$.

(Reported by Dr. B. Connor Johnson (1955), University of Illinois.)

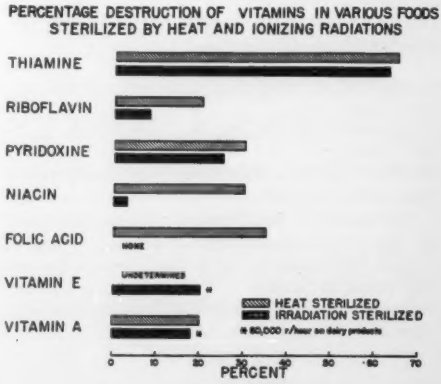


FIG. 3

tively resistant to radiation sterilization in contrast to the destruction of these vitamins by heat sterilization. The other water-soluble vitamins which have been studied, such as riboflavin and folic acid, do not exhibit appreciable destruction following irradiation, whereas losses due to heat sterilization are approximately 35 percent.

Summary

The availability of nuclear energy for the preservation of foods has introduced a new concept of food processing. This method may provide a means of preserving military ration items in the original fresh state without sustaining the structural impairment caused by heat sterilization. Radiation sterilized and/or preserved foods have not been found toxic on the basis of animal and human feeding experiments conducted thus far. The nutritive value of radiation-processed foods has been found to be equal to that of heat-processed foods. The life span of laboratory animals maintained on irradiated foods has been found to be the same as that for animals maintained on heat-processed foods. To the Armed Services, radiation preservation of foods offers the advantages of increasing the supply of perishable foods by extending the shelf-life of perishable vegetables and meats without refrigeration, minimizing storage depreciation of potatoes and onions by inhibition of sprouting and conserving the supply of cereal products in storage through destruction of insect infestation.

References

[1] Alexander, H. D., Day, E. J., Sauberlich, H. E., and Salmon, W. D.: Radiation Effects on Water Soluble Vitamins in Raw Beef, Federation Proceedings, September 1956.

[2] Brownell, L. E., Burns, C. H., and Eckstein, H. C.: The Wholesomeness of Gamma Irradiated Diet as Determined by Long-Term Animal Feeding and Breeding Studies with Albino Rats, Contract Research Progress Report, University of Michigan, Memorial Phoenix Project No. 41 (1956).

[3] Brownell, L. E., Burns, C. H., and Kleyn, K. A.: Wholesomeness of a Gamma Irradiated Diet Fed to Chickens and Gamma Irradiated Potatoes Fed to Rats, Contract Research Progress Report No. 6, University of Michigan Fission Products Laboratory. (1956)

[4] Bubl, E. C., and Butts, J. S.: The Effects of Irradiation on the Wholesomeness of Mixed Organ Meats in the Diet of the Rat, Fed. Proc., Sept. 1956.

[5] DaCosta, E., and Levenson, S. M.: Effect of Diet Exposed to Capacitron Irradiation on the Growth and Fertility of the Albino Rat, Medical Nutrition Laboratory, Report No. 89. (1951)

[6] Johnson, B. Connor: The Effect of Irradiation Sterilization on Protein, Carbohydrate, and Fat with Particular Reference to their Nutritive Value. Paper presented at Am. Assoc. for Advancement of Science Meeting, Atlanta, Georgia, Dec. 29, 1955.

[7] Kung, H. C., Gaden, E. L., and King, C. G.: Vitamins and Enzymes in Milk—Effect of Gamma Radiation on Activity, J. Agr. Food Chem. 1:142. (1953)

[8] McCay, C. M.: Effect of Ionizing Radiation on the Nutritive Value of Food, Contract Research Progress Report, Cornell University, June 30, 1956.

[9] Mead, J. F.: University of California at Los Angeles, Paper presented at Fed. Am. Soc. for Exp. Biol. Meeting, Atlantic City, N.J., April 19, 1956.

[10] Meinke, W. W.: Does Irradiation Induce Radioactivity in Food? Nucleonics 12: (No. 10) 37. (1954)

[11] Peterson, D. C., Webster, S. H., and Liljegren, E. J.: Activities Induced in Common Foods by Thermal Neutron Exposure, Nucleonics 10:33. (1952)

[12] Poling, C. E., Warner, W. D., Humburg, F. R., Reber, E. F., Urbain, W. M., and Rice, E. E.: Growth, Reproduction, Survival and Histopathology of Rats Fed Beef Irradiated with Electrons, Food Research 20: (No. 3), 193. (1955)

[13] Proctor, B. E., and Goldblith, S. A.: The Effect of Soft X-Rays on Vitamins (Niacin, Riboflavin, and Ascorbic Acid), Nucleonics 5: (No. 3) 56-62. (1949)

[14] Proctor, B. E., and Nickerson, J. T. R.: Research to Determine Whether any Toxic Effects or Protein Quality Changes are Induced in Dried Whole Egg by Ionizing Radiation, March 13, 1956, Progress Report.

[15] Teply, L. J., and B. E. Kline: Studies on Wholesomeness and Possible Carcinogenicity of Radiated Foods, Federation Proceedings, Sept. 1956.

[16] Ziporin, Z. Z., Kraybill, H. F. and Thach, H.: Studies on Vitamin Content of Foods Treated by Gamma Rays, in press. (1956)

Preventive Periodontics*

By

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THE subject of this paper is preventive periodontics, yet the title might have been, with equal accuracy, "Good Dentistry." At the outset, one point should be clarified. When I use the term preventive periodontics, I refer not only to the phase of preventive therapy that deals with prophylactic scaling and patient education in oral hygiene, but also to the early diagnosis and treatment of pathologic conditions which would otherwise inevitably lead to more serious periodontal disease; for in any aspect of the healing arts, the reasoned and primary approach to a problem should be, we know, from the preventive basis. Moreover, preventive periodontics is the responsibility of every dental officer, not merely the specialist. Thus, when I speak of good dental practice, I mean that practice which brings to every patient the best oral health program possible.

We in the profession appreciate the importance of good mechanical dentistry, for we know it prevents pathologic conditions of the supporting periodontal tissues. In carrying out his mission, each dental officer is practicing preventive periodontics. The practitioner in operative dentistry who places a restoration, the orthodontist who treats malpositioned teeth, the prosthodontist who inserts a successful partial denture, the dentist who patterns and constructs a crown or fixed prosthesis, the oral surgeon who extracts a hopelessly involved tooth—all of these people are practicing preventive periodontics.

The dental profession has progressed with giant strides. Dental caries has been reduced about 65 per cent by the fluoridation of water supplies and by dietary controls. Restorative procedures have been bettered as a result of improvements made in material and technique through research and clinical evaluation. Endodontic therapy is based on scientific facts and on a full understanding of the problems involved. However, it is rather disheartening to continue to see splendid examples of restorative dentistry in periodontally diseased mouths; it is even more discouraging to find patients uninformed of pathologic conditions.

Orban[1] states that the periodontal membrane is the most vital part of the dental apparatus because, although a tooth can function without a pulp and its crown portion can be restored, no human tooth can be maintained in health without an adequate periodontal membrane. It is the opinion of Box,[2] moreover, that periodontal disease is a menace to individual and national health, and that this disease is the most important single cause of loss of human teeth; he states further that the present emphasis on dental caries, with relegation of periodontal disease to a position of secondary importance, does not contribute to the best interests of either dentistry or the public welfare. Such studies and opinions of outstanding men in our profession should focus our attention on the early incipiency and prevalence of periodontal disease.

It is interesting to note that in 1880, the life expectancy of man was 34 years. Medicine, largely through its preventive programs, has increased the average life span to 69.5 years, or more than double what it was 75 years ago. In view of this longer expectancy, it is appropriate, I believe, to

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The opinions or assertions contained herein are the private ones of the writer and are not to be construed as official or reflecting the views of the Navy Department or the naval service at large.

ask what we in the dental profession are doing to enable people, dependent on us for dental service, to keep their natural dentition throughout this ever-increasing life span. Specifically, what have we done to solve the problem of averting or preventing incipient destruction of the periodontal tissues and preventing the transition of the sulcus into a pathologic pocket? The answer—unfortunately, it does not warrant pride or complacency—is that we have failed to give a realistic percentage of our time to preventive periodontics, and we have failed to provide our patients and dental personnel with the proper education and motivation.

What must we do, then, to eradicate periodontal disease, which heads the list of the causes of the loss of teeth? First, we must spend more time educating our patients in the best concepts of oral hygiene and motivating them to better personal oral care by pointing out the inevitable results of poor oral hygiene and the rewards of persistent, correct hygienic practices. Every patient must understand that failure to use a toothbrush both properly and frequently results in the establishment of an environment conducive to tissue breakdown. Yet, mere exhortation is not enough. Each patient's oral hygiene technique must be checked and rechecked to determine whether he has attained proficiency. To educate and motivate patients to implement these procedures is the most important step in a preventive program because unless this step is accomplished, office procedures will fail.

Our second task is to educate and motivate our colleagues to diagnose and treat accurately the early signs and symptoms of periodontal disease. It is impossible, in my opinion, to overemphasize the importance of early detection of such diagnostic signs as changes in tissue texture, color, and architecture; and presence of hemorrhage or suppuration; and early radiographic changes from the normal. Treatment or prophylaxis must be aimed at the elimination of etiologic factors in the earliest stage. We in the military health services have ample opportunity to examine our personnel. When examining these patients, it is imperative that we recognize the signs of early pathologic tissue changes and institute the proper therapy—which may consist of education in oral hygiene; periodontal scaling or curettage; elimination of an irritating restorative margin; or correction of an open contact, a traumatic occlusion, or a faulty partial denture. Examinations are carried out not only to record defects, but also to determine and institute required treatment—let us never forget this.

What is the past record of preventive periodontics in the Naval Dental Corps? The principal duty of all naval dental officers "is to treat and prevent diseases, disabilities, and injuries of the jaws, teeth, and related structures." Navy dentists are further charged with responsibility for utilizing measures "to promote oral health by preventing diseases of the teeth and associated structures to the maximum extent possible," for supervising "the dental hygiene of the personnel," and for instituting "such measures as . . . necessary to prevent or control dental disease."[3] Thus, preventive periodontics is the moral and professional duty of every naval dental officer.

In regard to education and training, I know that since my entry into the Naval Dental Corps in 1943, periodontics has received more and more emphasis. That portion of the Naval Dental School's General Postgraduate Course dealing with periodontology has been continually developed and expanded to keep pace with the most recent concepts and techniques in this field. Until recently, few dental schools offered any type of graduate study in periodontology; but as these courses have developed at different civilian institutions, they have been made available to naval dental officers. Courses in oral hygiene are maintained for naval dental technicians, and this training is supplemented by in-service training programs. Literature on the care of the teeth and the prevention of dental disease has been compiled, published, and distributed to

personnel; and three training films on these same subjects have been produced. At naval recruit stations, lectures and films on the basic concepts of oral hygiene, including proper toothbrushing technique, are presented, and toothbrushes distributed. At the operating level, naval dental officers are encouraged to supervise and administer oral hygiene programs, which are supplemented by films, lectures, and literature.

Much is being done, moreover, to expand and improve the Naval Dental Corps' program of preventive periodontics. At the Bureau level, definite action continues to emphasize and strengthen the practice of preventive dentistry. The education and training program is being broadened and improved; new films are in process for patient education and the training of dental personnel; pictorial matter and literature are being prepared for educating patients; and training in oral hygiene for dental technicians is being augmented. For naval dental officers, educational opportunities have greatly expanded during the past few years. Courses are available at both civilian institutions and at service schools; and residencies in periodontics have been given by the Navy for the past five years at several naval activities. These educational opportunities can lead to qualification for board certification in periodontics. The knowledge and experience of naval dental officers thus certified are passed on to officer students in the General Postgraduate Course at the Naval Dental School in Bethesda, Maryland, and at the various residencies previously mentioned. This type of program, in effect at the operating level, encouraged by our administrative officers, will provide the type of preventive dentistry desired by the Naval Dental Corps.

In the final analysis, however, preventive periodontic therapy remains the responsibility of the individual dental officer; at the same time, he must be supported by capable and adequate auxiliary personnel and the facilities necessary to carry out his mission.

References

[1] Orban, B.: Biologic considerations in restorative dentistry. J.A.D.A. 28:1069 (July) 1941.

[2] Box, H. K.: Oxygen Insufflation in Periodontal Diseases. Springfield, Ill., Charles C Thomas, 1955.

[3] Manual of the Medical Department, U. S. Navy, Chap. 6.

Searching for Know-How—Toward Progress in Nursing Service Through In-Service Education*

By

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DURING this past year, the problem of providing in-service growth for all members of the Army Nursing Service has been very much in the thoughts of our Army Nurse Corps leaders. The discussion of this subject by a member of the Army Nurse Corps at today's session has not been warranted by either our achievements in the field or the solutions we have for the problem. It is an opportunity to share with you some of the ideas with which our administrative and educational personnel have been busied. The result of this study has been marked agreement that the problem is being attacked from its accessible side. We believe that success will come with concerted and persistent efforts. We believe that the choice of the right aspect of the problem will enable nursing administration to change the things that can be changed.

INTRODUCTION OF TOPIC

Our first consideration today is in defense of the title of this section of the program. "Toward Progress in Nursing Service Through In-Service Education" seems appropriate. It enables one to make several assumptions relative to this meeting and the basis for our thinking together. Unanimous progress in nursing service follows unanimous purpose. This group has met because of its mutual concern with the quality of nursing service for which it is responsible and with what happens to those who give that service. The use of the word *progress* gives a note of optimism, and *toward* signifies that this group is in a forward-looking position and denotes some degree of movement versus stasis. This assumption is valid. The fact that nursing service administrators are pondering the subject indicates that the basic concept of in-service education as a function of nursing administration is acceptable to you. In-service education has been placed in its proper relationship to nursing service, since the topic clearly states that in-service education is a means to an end and not an end in itself.

Further attention to the title and its appearance may evoke certain reactions that merit a closer look. The clamour from all corners of the province of nursing for help in in-service education is an encouraging phenomenon if one listens with a realization that it is proof of a newly awakened sense of the needs of nurses. At the same time, it is a matter for grave concern when one sees a trend on the part of some to present in-service education as an academic subject. Nursing educators have voiced their anxiety in response to this crescendo "Give us in-service education!" The study of in-service education must relate to a specific job and to the people in that job. The objectives, content, and know-how of in-service education must be learned in an actual work situation with a real live working staff. In the preparation of leaders for this adjunct of nursing administration, there is no substitute for experience with a well-planned and implemented program. In-service education is not a new tool, but an old one that needs more use and more skillful users. The schools are giving an increasing number of nurses a sound academic background in principles of education, administration, and the social sciences. But it is left to nursing service to provide in-service education for these potential

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leaders in the field. There is a discrepancy between the supply and the demand in all areas of nursing leadership. For in-service education, the answer to this dilemma is that nursing administrators at the hospital level must "grow their own," because that is the only place they *can* be grown. To those who attempt to respond to the challenging questions brought about by this increased emphasis on in-service education there is also concern, because the answers they have to offer are so simple and involve working with what one has to contrive one's own plan. A nonspectacular remedy to a problem is always a gamble for the one who gives it. Which response can one expect? Will they say "Why, we can do that" or "Ridiculous! It couldn't possibly work"? In-service education is, in essence, helping people to help themselves. Nursing need not be abashed if it is a bit uncertain as to just how this is accomplished, for many leaders in other disciplines are facing the same perplexing question. The reproach will be for what one did not attempt.

Scope of In-Service Education

The scope of in-service education extends to every individual assigned to the nursing services. The period of employment for each person should be an in-service growth experience for that person. Recognition that this is not happening, generally, is the most probable explanation for the present-day attention that in-service education is receiving from administrators and their staffs alike. There are causative factors for this failure that one can review. A scrutiny of these factors may provide a challenging state-of-affairs for some chief nurses who are desirous of guidelines for their own planning. The degree of educational emphasis in a particular nursing service situation depends upon the degree of acceptance of the educational function of nursing. In some situations where this function had been recognized, it still has not been fully implemented because of a lack of cognizance of the teaching-learning experiences inherent in every day practice. In order to utilize these experiences, competent professional leadership must be provided the nursing service team on-the-job. Staff development at all levels has broken down when assignments are not planned with in-service growth values in mind. Too often the criteria for an assignment is "What can you do?" rather than "What could you do?" Granted, it is easier from the viewpoint of administrators to assign the person most experienced to do the job, but is it always one's duty to do so if one considers the dual mission of military nursing—service and training? The whole question of assignment planning may be the key to lack of motivation in some situations. Another key closely allied to this one is lack of provision for progression of the nursing service team members as a result of in-service growth. When in-service education has fully extended its scope, then creative educational experience will be placed within the reach of everyone. It is truly the most economical educational program for nursing growth that we have, because it takes place on the job as an integral part of day to day functions. It capitalizes on individual initiative so that it achieves both member and group goals. Those who are delinquent in their own concern for growth are identified and challenged by group interests and pressures. In-service education utilizes leaders wherever leadership is found and provides a mode of self-expression variable to all levels of nursing service personnel.

In the hands of the skillful nursing service administrator, in-service education becomes a tool that will work for her. She would hardly call it a luxury: she thinks of it as a necessity. In varied ways she uses it to improve nursing service. It becomes a vehicle for translating advances relative to nursing into practice. These advances may be anything from technical "know-how" to communication skills. In-service education makes possible immediate application of things learned. Within the realm of in-service activities, the chief nurse can provide laboratory experiences for members of her staff

who have been students of advanced study. There can be follow-up problems for other members returning from participation in short courses, workshops, and conferences. Reciprocal stimulation takes place between in-service education activities and an applied research project going on within nursing service. The extension of the functions of nursing on the health team necessitates continuing in-service education efforts in reorientation of nursing personnel. In all these areas, an increasing number of nursing administrators no longer think of in-service education as a last resort—but as their first recourse. Planned in-service education is an instrument of administration rather than one of its chores.

The counseling and guidance aspects of in-service education help to place the staff development efforts of administration on a sound footing. Hand in hand with its contributions in this area is the morale factor presented by such an individualized concept. The chief nurse sets the stage for maximum benefits in such a program by leading her staff in free communications and the open-door policy of administration. This she does both by precept and example. The supervision of people takes priority over the supervision of things. Members of nursing administration must become adept at recognizing implications for in-service growth needs in administrative problems. They need a keen sensitivity to unexpressed as well as expressed attitudes that are reflected in job satisfactions, interpersonal relations, communications, and the utilization of skills. The staff development responsibilities of administration extend also to providing consultative service relative to academic opportunities available to the staff. An organized plan to provide accurate information and wise counsel regarding full or part time study is a vital component of in-service education for Army nursing service personnel. The success of the many-faceted program for staff development depends in large measure upon the counseling and guidance skills that administrative and educational members of nursing service employ in their daily supervisory and teaching activities.

Areas of In-Service Education Objectives

In considering the scope of in-service education, a nursing service administrator is aware of the need to make decisions as to the specific areas toward which the efforts of her staff should be directed. No program can attempt to be all things to all people at one time. The focus of the program for each nursing service situation must change from time to time in view of changing needs and already achieved objectives. The planning for in-service education must be carried out at each hospital by the nursing service staff of that hospital with priority given to evidenced areas of need. This group may be interested in some of the major areas into which the in-service education needs of Army nursing service seem to be grouped. Even though this is by no means an exhaustive list, it may offer some guidelines for thinking about what military nursing could accomplish through more effective in-service education programs for nursing service personnel.

The extension of the professional competence of nurses is basic to progress in nursing service. There is no substitute for quality in professional leadership. Nursing has just begun to recognize the challenge of meeting needs for leadership in the nursing service team, full participation in the health team, and authority of clinical and social science research in nursing. The responsibility for the eventual attainment of full professional status for nursing rests upon all of us. We believe that before Army nursing can increase the significance of its role in this task on a profession-wide basis, it must first see to it that these standards of professional status operate throughout the Army Nurse Corps.

Military nursing shares also in the profession's problem of the growing shortage of nurses to fill the increased demands for nursing service. Constructive contributions

toward meeting this issue must also be offered by all. There is still so much to be done to better utilize the existent professional nursing skills through application of the team concept more fully to nursing service. Our nurses need planned in-service growth experiences in administration of personnel, delegation of duties, teaching and supervision of team members, and comprehensive nursing care plans based on the differential functions of the nursing team. The shortage can certainly be somewhat alleviated in all hospitals by increasing the useability of nurses by increasing their flexibility and adaptability. Administration may approach this objective by a system of rotation of all nurses between the different services combined with formal and informal in-service instruction. One is not saying that nurses should not have a speciality. Specialization is desirable and valuable, but in addition, nurses should extend their functions through such a program as suggested here. To plan for a stockpile of knowledge and skills for nursing personnel is the only insurance that nursing administration has for even minimal coverage when meeting day to day emergencies, disaster, or mobilization of nursing in the event of a national emergency.

The preparation of nursing for mass casualty care cannot be overemphasized for in-service education planning. This carries both civilian and military significance. Nursing administration carries the responsibility for planning, since the largest number of active nurses are in nursing service. The urgency of this planning for military nursing is even greater in view of its preparedness mission in caring for mass casualties. The starting point may well be the survival point—emergency medical care that is basic to self-aid and buddy-aid. In-service education programs must be geared to the concept that the functions of nurses will be extended in disaster. Nurses must become familiar with an organized plan for handling large numbers of patients and personnel. As they participate in the preparation of others, such as Army Medical Specialist Corps officer and untrained enlisted and civilian personnel for their potential roles on the nursing team, they will gain practice in the patterns for the use of such nursing teams in disaster. There may be a very high price for complacent neglect to prepare nursing staffs for individual and mass casualty care. Only through education and training programs in effect can administration be assured that optimum efforts are being made in preparedness.

Conclusions

The responsibility for in-service education rests with nursing service. The very terminology states as much. Nursing educators recognize that nurses have needs that cannot be met at the pre-service level. Nursing curricula are planned accordingly, since certain learning experiences must be in-service in nature. Nursing service administration must accept its educational function. It is believed that this function is most efficiently implemented by an organized scheme of in-service growth for every member of nursing service personnel. Maximum results must be planned for, because they "don't just happen." Perhaps some military nursing administrators would like to know if they have a choice. Yes, you have. You may begin providing now for the in-service growth needs of your staffs, or you can start thinking up a very good answer to give to those more than eight thousand nurses who will someday be asking "Why didn't you?"

If military nursing fails to make progress in nursing service through in-service education, it will have to face the consequences. Perhaps even blame for not assuming the position of leadership for all nursing services. Why should military nursing not lead? It has everything to work with—the professional know-how, the organization, and the best reasons for motivation in the world.

How the Legal Considerations Apply to the Army Nurse

By

LT. COLONEL RAYMOND COWARD, JAGC, *U. S. Army**

INTRODUCTION

SINCE 1903, or for over half a century, we have had legislation and legal decisions involving professional nurses. All the 48 states, the District of Columbia and four territories have laws regulating professional nursing. About 42 states have laws regulating the practice of practical nursing.

Under our system of government the source of any legal control over a trade, business, occupation, or activity lies with the state governments. The authority of such control is known as the police power of the state. This has nothing to do with the police force, but rather, it is the authority by which state governments may pass laws on matters affecting public health, safety, or morals.

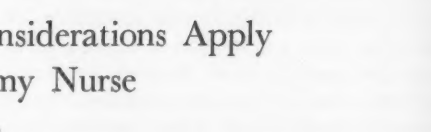
Our Constitution requires that any law which is passed regulating an occupation, trade, business, or activity must meet three basic conditions:

1. The law must be *necessary* because a question of public health, safety, or morals is involved.

2. The law must *operate equally* on all who are at the same time performing the act.

3. The law must establish means which are *reasonable* for the accomplishment of its objective.

Thus we see the basic reasons for establishing laws and regulations and the exercise of controls by the state over activities which affect the public in general.



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SEVEN FUNCTIONS OF PROFESSIONAL NURSING

The professional nursing group is probably the only group, except the medical profession, which has the advantage of laws and court decisions for over half a century, which have been concerned with the functions of nursing, the rights of nurses to engage in activities and their responsibilities for their acts. These functions fall into seven categories and they must be analyzed to see if these functions are *dependent* or *independent*; i.e., whether the nurse's right to perform this activity is based on a legal order of a physician or whether it is an independent function of nursing. These seven functions are as follows:

1. The first legal function of nursing is the supervision of a patient. To supervise means to inspect, to oversee with authority. This is an independent function.

2. The second legal function is observation of symptoms and reactions. This is an independent function.

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3. The third legal function of nursing is recording. This is an independent function.

4. The fourth function is the supervision and direction of practical nurses and auxiliary workers. This is an independent function.

5. The fifth function is the fulfillment of any procedure and technique, involving even the practice of medicine as defined by a medical practice act, including the administration of transfusions, under the direction or supervision of a licensed physician, provided the nurse has an understanding of cause and effect. This is, of course, a dependent function.

6. The sixth legal function is the execution of independent nursing procedures and techniques. This is an independent function.

7. The seventh and last legal function of nursing is health direction, education, and social services, including activities which have psychological import. This is an independent function.

There, then, are the seven legal functions of nursing.[1]

Legal Considerations Affecting Nurses Generally

The general legal principles affecting nurses in the practice of their profession are the same that affect other persons in the practice of their professions or occupations. The application of the laws is in terms of the specific practice involved. In each type of case there are underlying legal principles. These legal principles are usually based on precedent, custom, or moral grounds. The law affects the lives of many people daily—births and deaths must be recorded as a legal requirement; certain diseases must be reported to legal authorities; pure water and milk are controlled by law; every purchase is a legal transaction; children are required by law to go to school; licenses are required to hunt, fish, own a dog, drive a car, or get married; and every worker has a legal status derived from the terms of his contract of employment. The state prosecutes those who violate the law.

Definition of Crime and Tort

The basic distinction between a crime and a tort should be understood. Accordingly, brief definitions are given as follows:

Crime—A crime is a legal wrong against the public or state. Examples: Murder, robbery, kidnapping, etc.

Tort—A tort is a legal wrong committed by one person involving injury to another for which the law provides a remedy by permitting the injured party to sue and recover damages. Examples: Assault and battery, false imprisonment, injuring a person or his property through negligence, etc.

"Three elements of every tort action are: Existence of legal duty from defendant to plaintiff, breach of duty, and damage as proximate result."[2]

The most common cause of legal suits against nurses, as against all professional practitioners, is for *malpractice* (or negligence in professional practice) which results in unintended injury to a person.

A basic legal principle, which I wish to emphasize, is that *an individual is always responsible for his own actions and that this responsibility cannot be transferred to or assumed by another person.*

Some nurses may have been told or believe that the employing agency, the hospital, or the doctor would assume responsibility for injurious actions to patients. Such is not the case.

Respondeat Superior

There is the rule of "Respondeat superior" which means "Let the master respond or answer." This rule provides that an employer or a principal is liable for the torts committed by the employee or the agent in the course of employment or the agency. This rule does not absolve the employee from lia-

[1] See Article, "Nursing Functions and Legal Control," by Milton J. Lesnik, in *The American Journal of Nursing*, October 1953, page 1210, and authorities cited therein.

[2] Black's Law Dictionary, citing *City of Mobile* v. *McClure*, 221 Ala. 51, 127 So. 832,835.

bility, but rather it permits the injured party to sue both the employee and the employer. Often the employer is in a better financial position and therefore in many instances the suit is brought against the employer or jointly against the employee and employer so that the injured party has a better chance of collecting the damages he seeks.

Ways in which the nurse may be before the court

There are numerous ways which a nurse may be before the court either voluntarily or involuntarily. Some of the ways are:

1. She may receive a court order (subpoena) to appear as a witness for either party in a case about which she has personal knowledge.
2. The nurse may be sued and be a direct party to the law suit.
3. A suit may be for breach of contract brought by the patient or the employer.
4. Malpractice in rendering nursing care may be involved.
5. She may be charged with assualt and battery by using force in dealing with a patient.
6. False imprisonment may be charged where undue restraint is used.
7. A suit may involve loss or damage to property of a patient.
8. The nurse may be a party suing some other party, patient, or employer, for any of the aforementioned reasons.

Questions the Court Considers

There are basic questions which a court must consider in an effort to determine liability in any case of negligence or malpractice. Some of the more important questions are:

1. Was there a duty?
2. Was there an injury?
3. Was the injury due to negligent action?
4. Did the injury result directly from the negligent action?
5. Did the nurse commit the negligent action? (Or did she negligently omit to do something?)
6. What would a reasonable nurse have done under similar circumstances?

In seeking an answer to the last question the problem would arise as to what constitutes *nursing actions* or *functions*, i.e., how is nursing defined and how are nurses educated to practice nursing? As indicated previously certain nursing functions are *independent* and may be done without prior consent of the physicians. In one area, that of carrying out orders of a duly licensed physician, the function is *dependent* on medical direction or supervision.

It is important to remember that *a nurse who carries out orders without understanding the effects is negligent if injury results.* The practice of nursing requires the exercise of judgment based on knowledge. The question at issue in negligence cases is whether proper judgment was exercised. The nurse is required to meet the level of professional community practice and not the level of skill or training possessed by the isolated or unusual practitioner.

The nurse will be expected to practice with the welfare of the patient uppermost in mind.[3]

Federal Tort Claims Act[4] and How It Applies to the Army Nurse

It is a general rule of law that a government cannot be sued without its consent, and generally a government is not liable for the tortious acts of its employees committed in the course of business that is strictly governmental in character.

In 1946, the Federal Government enacted the Federal Tort Claims Act which created consent of liability where claims are established for damage to or loss of property, or for personal injury or death, caused by negligent or wrongful act or omission of any employee of the Government while acting within the scope of employment or office, in

[3] See Article, "Nursing Practice and the Law," by Bernice E. Anderson, R.N., Ed.D., in *The American Journal of Nursing*, April 1955, page 438.

[4] 28 U.S.C. 2674 (1946).

circumstances in which the United States, if a private person, would be liable to a claimant in accordance with the law of the place in which the act or the omission occurred.

The Federal Tort Claims Act provides specifically that the acceptance by a claimant of an award or a settlement shall constitute a complete release by the claimant of any claim against the United States *and* against the employee of the Government whose act or omission gave rise to the claim.

The Federal Tort Claims Act *excludes* specifically any claim for negligence arising out of the exercise of a discretionary function relating to policy or interpretation, miscarriage of mails; arising out of assessment or collection of custom duty, quarantine, assault and battery, false imprisonment, false arrest, malicious prosecution, abuse of process, libel, slander, misrepresentation, deceit or interference with contract rights; arising out of the operations of the Treasury or combat activities of Military Forces during time of war; arising in a foreign country, in the operation of T. V. A. or the Panama Canal.

In effect, the Federal Tort Claims Act establishes consent on the part of the Federal Government to liability under the rule of *respondeat superior* for negligence of employees in certain instances committed in the course of employment. There is no consent to being sued for claims arising under the exemptions above stated. A person having a claim for any cause other than negligence as limited would be in the same position as were claimants sustaining negligent injuries prior to the enactment of the Federal Tort Claims Act, and as are claimants who have sustained injuries committed by state governmental employees. Such claimants cannot institute legal proceedings in courts; they are required to seek the aid of the Congress in case of a claim against the Federal Government, or the aid of state legislatures in the case of a claim against a state government, for the enactment of a special law to compensate them for damages sustained.

Under the Federal Tort Claims Act, claims under $1,000 may be compromised and settled by heads of Federal agencies and departments. Claims over $1,000 may be compromised and settled, but must be approved by a Federal court. Claims not settled may be determined by legal proceedings which must be commenced within a specific period of time, generally one year in most instances, from the date of the commission or the omission constituting the negligence. The proceeding is commenced in one of the United States District Courts.[5]

Army Regulations 25-70, dated 2 March 1951, entitled "Claims and Litigation," set forth the policy of the Department of the Army and give guidance with respect to claims cognizable under the Federal Tort Claims Act.

Definitions in Army Regulations 25-70 include:

1. *Employee of the Government*

" 'Employee of the Government' includes members of the military forces of the United States, and persons acting on behalf of the Department of the Army in an official capacity, temporarily or permanently in the service of the United States, whether with or without compensation."

2. *"Acts or omissions"*

"Scope of employment—Acts or omissions of military personnel and civilian employees may give rise to claims payable under these regulations only if such acts or omissions occur while such military personnel or civilian employees are acting within the scope of their employment. The question whether activities of military personnel and civilian employees in the course of which such acts or omissions may occur are within the scope of employment must be determined in accordance with the law of the place where the acts or omissions occurred. These activities of military personnel and civilian employees

[5] "Nursing Practice and the Law," 2d Ed., pages 215-216, by Milton J. Lesnik, Attorney, and Bernice E. Anderson, R.N., Ed.D.

ordinarily are within the scope of employment if the performance thereof is directed, or if of a kind the performance of which is expressly or impliedly authorized, or if the purpose is, at least in part, to serve the Government. In determining whether conduct, although not expressly authorized, is nevertheless within the scope of employment, consideration may be given to all the attendant facts and circumstances, including the time, place, and purpose of the activity; whether the activity was for the furtherance of the general interests of the Government; whether the activity is usual for personnel of the grade and classification involved or reasonably to be expected of such personnel; and whether the instrumentality from which the damage or injury resulted was owned or furnished by the Government. A slight deviation as to time or place ordinarily will not constitute a departure from scope of employment; such a deviation, to have legal effect, usually must be a material deviation."

Any Army nurse, or Army doctor for that matter, who is sued individually or joined in a suit as party defendant along with the United States Government for malpractice in connection with the performance of official duties should make an official report of the matter under the provisions of Army Regulations 27-5. The report should be forwarded to the Legal Office, Office of The Surgeon General, which will take up the problems involved, through The Judge Advocate General of the Army, with the Department of Justice. The latter will then arrange to have the United States Attorney in the Federal District where suit is brought to appear and defend the individual nurse, or doctor, and the United States Government.

If a judgment is obtained against the Government and the individual, the Government will pay the judgment. The Federal Tort Claims Act provides that, "The acceptance by the claimant of any such award, compromise, or settlement shall be final and conclusive on the claimant, and shall constitute a complete release by the claimant of any claim against the United States and against the *employee of the Government* [emphasis added] whose act or omission gave rise to the claim, by reason of the same subject matter."

Therefore the payment of the claim by the Government precludes the claimant from seeking further remedies against the individual employee (or nurse) of the Government.

Res Ipsa Loquitur

There is a doctrine in the law relating to negligence cases known as "res ipsa loquitur" or "the thing speaks for itself."

Often plaintiffs and their attorneys in malpractice proceedings encounter difficulty in obtaining the services of experts in the medical and nursing professions to testify that a colleague was negligent. The doctrine of "res ipsa loquitur" is of great assistance to the plaintiff under such circumstances. Except for this doctrine how could plaintiffs otherwise prove that paralysis, burns, foreign substances in the abdomen, and other such conditions were the result of negligent acts?

Three conditions are necessary for the rule of "res ipsa loquitur" to apply. They are:

1. The accident is of a kind that does not occur in the absence of *someone's negligence.*

2. The inquiry is caused by an instrumentality within the *exclusive control of the defendant.*

3. The accident is of a kind that the *plaintiff could not have contributed to by his conduct.*

How this doctrine is applied depends on the law of the particular state. In some states proof of the three required conditions is considered as circumstantial evidence and negligence may be inferred. In other states proof of these three conditions creates a presumption of negligence and places the burden on the defendant to overcome the presumption. A *presumption* is a deduction which the law requires the trier of facts to make, an *inference* being a deduction which

the trier may or may not make according to his own conclusions; a *presumption* is mandatory, an inference permissible.[6]

A leading case in the United States on the doctrine of "res ipsa loquitur," as applied to malpractice suits, is the case of *Ybarra* v. *Spangard,* 146 P(2) 892 (District Court of Appeals 2nd Dist. Dir. 3, California 1944) affirmed 25 Cal. (2) 486, 154 P(2) 687 Sup. Ct. of Calif. 1944). The essential facts are:

Plaintiff entered a private hospital for an appendectomy to be performed by the defendant. On the day of the operation, the plaintiff was wheeled into the operating room by Nurse Gisler, an employee of Dr. Swift, who owned the hospital. The anesthetist, a Dr. Reser, also an employee of Dr. Swift, adjusted plaintiff for operation, pulling his body to the head of the operating table, laying him back against two hard objects at the top of his shoulders, about an inch below his neck. The anesthetic was administered and plaintiff lost consciousness. He awoke next morning in his room attended by two nurses, also employees of Dr. Swift.

Plaintiff testified that prior to the operation he never had had any pain in, or injury to, his right arm and shoulder, but that when he awakened he felt a sharp pain between the neck and the point of the right shoulder. He received diathermy treatments, but the condition spread to the lower part of his arm. He could not lift or rotate his arm, and developed paralysis and atrophy of the muscles round his shoulder.

Plaintiff instituted proceedings against the physician who diagnosed the case, the owner of the hospital, the surgeon, the anesthetist and the three nurses. After plaintiff's testimony, attorneys for the defendants asked that the suit be dismissed on the ground that the plaintiff did not prove any defendant to be negligent; and, indeed, by all legal standards, the plaintiff did not. But the plaintiff contended that his testimony showed the existence of the three conditions necessary to invoke the doctrine of *res ipsa loquitur,* that the inference of negligence was established and that the plaintiff should prevail.

The defendants claimed the doctrine did not apply in this case; that the condition that the instrumentality was in the exclusive control of the defendant did not exist in this case; and that the doctrine cannot apply where several defendants are involved and there is a division of responsibility. The Court decided for the plaintiff and said:

"But we do not believe that either the number or relationship of the defendants alone determines whether the doctrine of *res ipsa loquitur* applies. Every defendant in whose custody the plaintiff was placed for any period was bound to exercise ordinary care to see that no unnecessary harm came to him and each would be liable for failure in this regard. Any defendant who negligently injured him, and any defendant charged with his care who so neglected him as to allow injury to occur, would be liable. The defendant employers would be liable for the neglect of their employees; and the doctor in charge of the operation would be liable for the negligence of those who became his temporary servants for the purpose of assisting in the operation.

"We do not at this time undertake to state the extent to which the reasoning of this case may be applied to other situations in which the doctrine of *res ipsa loquitur* is invoked. We merely hold that where a plaintiff receives unusual injuries while unconscious and in the course of medical treatment, all those defendants who had any control over his body or the instrumentalities which might have caused the injuries may properly be called upon to meet the inference of negligence by giving an explanation of their conduct."

This case shows the importance of keeping careful, complete and accurate case histories on each patient. This is important not only for the civilian nurse but for the Army nurse as well.

A recent California case arising from an act of malpractice by a Navy doctor in de-

[6] Black's Law Dictionary, 4th Edition.

livering a baby resulted in a judgment in excess of $200,000, mainly because no one could recall the facts and refute the plaintiff's contentions.

Malpractice Insurance

Policy of The Surgeon General

The question whether an Army nurse or an Army doctor should carry malpractice insurance is a matter for each one to decide individually. The Office of The Surgeon General does not take a position one way or the other on this problem. There are relatively few insurance companies who will write malpractice insurance. The rates are generally lower for persons in the Armed Forces than they are for civilians. Presumably the main reason for this is the knowledge that the lawyers for the United States Government will defend suits brought under the Federal Tort Claims Act.

Policy of the Department of the Army

The policy of the Department of the Army on malpractice insurance perhaps can be indicated by the position taken in 1956 with respect to H. R. 10577, Eighty-fourth Congress, a bill "To provide for the procurement by the Government of insurance against risk to civilian personnel of liability for personal injury or death, or for property damage, arising from the operation of motor vehicles in the performance of official Government duties, and for other purposes."

In opposing this bill the Department of the Army, *inter alia,* stated:

"The bill would provide a limited amount of liability insurance or alternatively virtually complete indemnification for a limited class of Federal employees subject only to the provision that in any such case the act of an employee forming the basis for such action must be found to be *'in the performance of his official duties'* [emphasis added]. It contains no standard of conduct for the officers and employees to be protected and no standard of responsibility for potential insurers."

The Department of the Army further stated:

"The Federal Tort Claims Act, supra, now provides ample protection to third parties damaged or injured by the actions or omissions of Government workers acting within the scope of their employment."

The Department of the Army also stated that Government procurement of commercial insurance would be unusual. It added, "It long has been the settled policy of the United States to assume its own risks." (35 Comp. Gen. 391, 392).

It would appear from the foregoing that the Army would not favorably consider sponsoring legislation which would authorize the Army to pay insurance premiums covering malpractice.

Emergencies

Federal Civil Defense Act (50 U.S.C. app. 2294 (1950))

This act became effective 12 January 1951. Section 2294 of this act provides:

"The Federal Government shall not be liable for any damage to property or for any death or personal injury occurring directly or indirectly as a result of the exercise or performance of, or failure to exercise or perform, any function or duty, by any Federal agency or employee of the Government, in carrying out the provisions of this title * * * *during the period of such emergency.* [emphasis added]. Nothing contained in this section shall affect the right of any person to receive any benefit or compensation to which he might otherwise be entitled under the Federal Employees' Compensation Act, as amended. . . ."

It will be seen that this statute also excuses the Government from liability for damages or injuries occurring as a result of the performance of, or failure to perform, *any function or duty* by any Federal agency or employee of the Government in carrying out the provisions of this law *in such emergency.*

Martial Law

In times of national emergency martial law may be invoked in order to insure the proper functioning of the Government and the public safety.

Martial law has been defined as follows:

1. "Martial rule, also termed martial law, is the temporary government of the civil population through the military forces as necessity may require in domestic territory." Paragraph 10, Army Regulations 500-50, 27 August 1953.

2. ". . . martial law is the exercise of the power which resides in the executive branch of the government to preserve order and insure the public safety in times of emergency, when other branches of the government are unable to function, or their functioning would itself threaten the public safety." *Duncan* v. *Kahanamoku*, 327 U. S. 304, 336 (1945) (Concurring opinion of Chief Justice Stone).

An emergency has been defined as "an unforeseen combination of circumstances or state of affairs which calls for immediate action."

Under common law there is no duty to aid another in emergency. Many states have enacted laws, however, requiring those involved in automobile accidents not to desert the scene of the accident and to render aid to others involved in the accident. Once an obligation is assumed or contracted for voluntarily, such as the establishment of a physician-patient or a nurse-patient relationship, that obligation encompasses the responsibility to render every necessary service that the situation demands.

A special rule of law applies to all who render emergency aid, and no exception is made in the case of nurses. For example, either by custom or statutory exemption contained in medical practice acts, one may perform a medical act to preserve life or limb. Such statutory exemption or custom permits freedom from otherwise limited areas or functions.

Though the right to render assistance may extend to acts that are properly the province of the practice of medicine, the reasonableness of any act performed in an emergency will be tested in the light of the background of the person who acted, as well as in the light of all the other factors and circumstances. Because the nurse has superior knowledge, experience and technical training, as compared to a layman, she would more likely be held to a higher degree of responsibility and knowledge of the consequences of acts she performs in an emergency.

How to Avoid Malpractice Cases

It has been stated that, "When every physician [and I presume the nurses should be included] cares for every patient in such a way that the patient is satisfied, there will be no malpractice claims." (Report of Law Department, American Medical Association, on Medicolegal Symposiums 1955, page 19.)

The Nightingale Pledge

Now, out of respect and consideration for Army nurses, and nurses in general, who are devoted to their profession and to the cause of relieving human suffering, I feel that it is only fitting that I should conclude by quoting some words which are meaningful and beautiful, and which are familiar to all nurses. I refer to The Nightingale Pledge.

"I solemnly pledge myself before God and in the presence of this assembly:

To pass my life in purity and to practice my profession faithfully.

I will abstain from whatever is deleterious and mischievous, and will not take or knowingly administer any harmful drug.

I will do all in my power to maintain and elevate the standard of my profession, and will hold in confidence all personal matters committed to my keeping, and all family affairs coming to my knowledge in the practice of my profession.

With loyalty will I endeavor to aid the physician in his work, and devote myself to the welfare of those committed to my care."

References

Lesnik, Milton J. Nursing Functions and Legal Control, The American Journal of Nursing, October, 1953, page 1210, and authorities cited therein.

Black, Henry Campbell. Black's Law Dictionary, 4th Edition, 1951.

Anderson, Bernice E. Nursing Practice and the Law, The American Journal of Nursing, April, 1955, page 438.

28 U.S.C. 2674 (1946).

Lesnik, Milton J. and Anderson, Bernice E. Nursing Practice and the Law, 2d ed., pages 215-216.

Army Regulations 25-70, 2 March 1951.

35 Comp. Gen. 391, 392.

50 U.S.C. app. 2294 (1950).

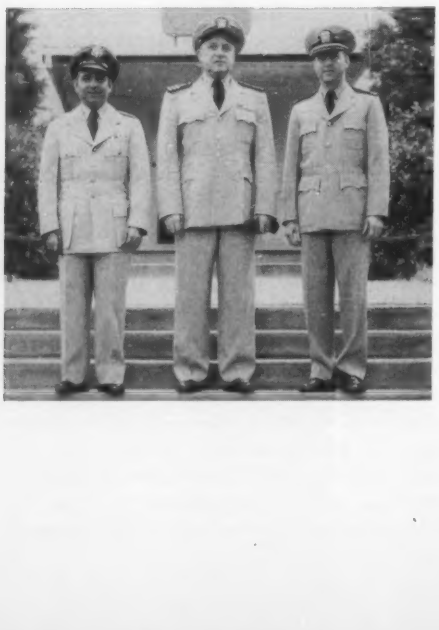
Army Regulations 500-50, 27 August 1953.

327 U. S. 304, 336 (1945).

Report of Law Department, American Medical Association, on Medicolegal Symposiums 1955, page 19.

U. S. Army Nurse Corps booklet, The Army Nurse.

MEMBERS OF ASSOCIATION OF MILITARY SURGEONS GRADUATING FROM U. S. NAVAL SCHOOL OF HOSPITAL ADMINISTRATION NATIONAL NAVAL MEDICAL CENTER, BETHESDA, MARYLAND



(L to R) Capt. Canio F. Palladino, USAF (MC); CDR C. F. Crawford, MSC, USN (School Commanding Officer); Lt. (JG) Irwin O. Stallings, MSC, USN.

Captain Palladino and Lieutenant Stallings will graduate June 14 from the ten-month course in Hospital Administration.

Mystic India

By
AMOS R. KOONTZ, M.D.

MY MISSION to India recently was a professional one and this gave me an unusual opportunity for observations with regard to people, their health, living conditions, customs, politics and religion—an opportunity certainly not enjoyed by the casual tourist. Some of the impressions made are set down here. I wish to make it clear, however, that I lay no claim to being an authority on India. These are simply casual observations.

India is a country of extreme contrasts. This, of course, may be said of many countries, even of our own. One finds the most luxurious hotels, such as the Taj Mahal in Bombay, the Cecil in Delhi, and the Metropole in Karachi (not now in India). In these hotels the servants are picturesque, turbaned, bearded Indians, who make one pinch himself to make sure he is not living in the Land of the Arabian Nights. Formerly, only Europeans were allowed to stay at the Taj Mahal Hotel. In spite of the changes in rules since the English left (an American negro was staying in the hotel when I was there), the romantic atmosphere of the East is still present and the Western visitor feels as if he were living in a realm of unreality.

Almost within a stone's throw of these luxurious hotels, which take the Westerner completely out of himself, are to be found the most drab and miserable slums which one will encounter anywhere in the world. The miserable shacks which are used as habitations in these areas, the crowding within them, the complete lack of the conveniences of living, are almost beyond belief. In walking or driving along the streets in these areas, one can see into the miserable huts, in which there is almost no furniture, and in which the crowding is so great that the half-naked people are almost literally crawling over each other. The inhabitants of these districts have no place to bathe except

FIG. 1. The Gateway of India and Taj Mahal Hotel, Bombay.

in the dirty gutters filled with stagnant water, which are found along the streets in front of their habitations. There they may be seen daily, washing themselves and their clothes in water which one would think would make them dirtier than before they entered it, yet both they and their clothes seem to come out fairly clean. Toilet facilities in these areas are non-existent. The people squat in the bushes or in the sand, or in any other available place. Toilet paper is unheard of. They cleanse themselves with dirt or sand. If they are a little better off, they may have a bowl of water and wash themselves with their left hand. They never use their left hand for eating. There is a reason. The ordinary Indian eats with his fingers, picking up his rice with a chapati (a large round soft flat Indian cake). The chapati is folded over and the rice is squeezed between the folded chapati with the fingers of the right hand. Cultivated Indians eat rice with a spoon and fork as the English eat dessert.

While the food of the coolies is principally rice, elaborate course dinners are regularly served in the good hotels and in the homes of the well-to-do and rich.

When anyone of the servant class speaks to anyone, he either salutes (most common)

or puts the palms of his hands together with his hands up to his face and bows slightly. The latter method is the common one of greeting with everyone in India.

The palaces of the Mogul emperors, while of a different style of architecture, are as beautiful and elaborate as most palaces seen in Europe. There are throne rooms with the walls inlaid with jade, agate, lapis lazuli, and precious stones. Most of the precious stones, however, have been removed by subsequent conquerors, principally the British. One of the most famous examples was the removal of the Kohinoor Diamond from the Peacock Throne of "The Fort" in Delhi. This palace was built by Shah Jehan and the famous diamond is now part of the British crown jewels. Shah Jehan was known as the builder. He also built a palace near Agra as well as the Taj Mahal in Agra.

The quarters of the harems in all these palaces are of immense interest (and possibly envy also) to the visiting Westerner. Everything was done to make the quarters of the ladies of the harem beautiful and colorful. There are many inlays of precious and semi-precious stones. In one of the palaces (The Fort), there is a fountain from which flows "The Stream of Paradise" over a marble bed. The ladies had to be diverted.

In the fields adjacent to the palaces one finds farmers ploughing with wooden plows and oxen—another example of the extreme contrasts found in India. Water buffaloes of course are much in evidence everywhere and add to the picturesque nature of the landscape.

My travel agent, a middle class Indian, invited me to his flat one afternoon. The flat was small, consisting of three rooms and a living porch. My host, a devout Hindu, showed me the small room which he used as a prayer room. There was a sort of altar before which he daily made his devotions getting up early in the morning and spending quite a little time at them. His household consisted of himself, his wife, two sons, and a servant. My host and I had a Scotch and soda and then his wife served us an Indian dish with chutney, and an omelet. There were also chapatis. His wife, following the Eastern custom, did not eat with us. She was also extremely silent, whether from Eastern subservience or lack of ideas, I could not determine. In fact almost the entire conversation centered around my host's devotions, so the occasion was, to say the least, not exciting.

In strange contrast there was the delightful dinner I had at the home of one of the leading surgeons in Bombay—a Parsee. He had a moderately large house (possibly 12 or 13 rooms), which was very attractive. Only his family were present—the doctor, his wife, his pretty 20-year-old daughter, and his sprightly 7-year-old son. I found the family to be a fine one. All of them spoke English perfectly. All were kind and well mannered with no pretentions. The conversation was general, lively, and enjoyable.

Before dinner we had Scotch whiskey. Then a perfectly delicious course dinner with a menu card made out in my honor. First there was "achoori tantalum"—a kind reference to my work on tantalum gauze. Achoori is an Indian dish made of eggs and Indian ingredients—very delicious. Then there was "chicken mayonnaise Baltimore"—the Baltimore of course being also a kind reference to me. This dish consisted of very tender chicken (boiled, I think) with mayonnaise over it—also delicious. Then there was "prawn pilao"—rice, deliciously flavored, containing small shrimp, with a sauce to put over the whole thing. Finally there was "glacé Amos" (also a kind personal reference), which consisted of delicious ice cream. We then had Indian coffee, which is very much like Turkish coffee, served in small cups. I can't imagine its being palatable without sugar, but it is very good with sugar. After dinner there was beer. They have English and German beer in India, but preservative has to be put in it to keep it from going bad in their hot climate, as they do not have adequate cold storage facilities. Before learning this, I had thought that the beer had had a somewhat peculiar taste.

I discovered that my host was a great

lover of music. As soon as I entered his house he put on a record of "Silent Night, Holy Night" and then other Christmas carols. This was done partially as a compliment to me, coming from a Christian world, but not entirely, as I found that he played them frequently for his own enjoyment because he liked the music. I told him that Franz Gruber, the author of "Silent Night, Holy Night" had a brother who emigrated to America. The son of the immigrant (a nephew of Franz) was in the United States Army all of his life and while a young lieutenant in the Philippines wrote the familiar and popular Field Artillery Song, which starts out with the words: "Over hill, over dale, as you hit the dusty trail, and the cassions go rolling along." Now it is the Army song, with new words. Lt. Gruber finally became Brigadier General E. L. Gruber (whom I once had the pleasure of meeting) and who has recently died.

Besides the Christmas carols my host had a lot of other good American music. He always has music going in the operating room when he is operating. He is an accomplished and enthusiastic photographer and some of his work has appeared in American journals. He showed me a lot of it—all of the highest quality. His daughter is a youthful artist and I saw a lot of her work, which was very fine —to my eye at least. The 7-year-old son was very bright and attractive and entered freely into the conversation whenever he was addressed. My hostess was also charming, highly intelligent, and an excellent conversationalist. I have seldom had a pleasanter evening. When I made my farewells, the whole family drove me back to my hotel.

I was frequently a guest in the homes of Americans in India. There I felt right at home, as indeed I did in the home of the Indian surgeon just mentioned. In the American homes they naturally stuck very closely to Indian food, which is delicious. There were plenty of mangoes all through India, both in homes and in hotels. At lunch one day in the home of an American, I was offered "mango fool." I inquired what it was and was told that it was a drink made of buffalo milk and mangoes. The idea filled me with horror, but following my custom of always trying the native dishes (I once ate toasted caterpillars in South America), I tried it and found it to be delicious. Buffalo milk as well as cow's milk is used throughout India. There is no pasteurization, so discriminating people always boil milk before drinking it.

Although there is no speed limit in India (except in the cities), travel by automobile is slow, both due to the nature of the roads and to the restrictions enforced by the impedimenta found on the roads—cows, pedestrians, cyclists, carts, donkeys, and dogs, none of which make any effort to stay clear of the motorist. It is incumbent upon the motorist to stay clear of all these things, especially cows, which are very sacred in India.

A custom which surprised me in India was that of placing leis around the necks of arriving and departing guests. This, of course, is routine in Hawaii. One theory as to the origin of the Polynesians is that they came from Southern Asia. Does the presence of this custom in such widely distributed areas bear out this theory?

According to many accounts, the sudden and forceful division of India into separate political groups caused untold suffering. I was told, for instance, that the Sikhs (who have a religion of their own) said to the Muslims "Get out. This country has been given to us." They drove them out with wholesale murders. They would go through a train and cut the throats of all the Muslim men, women, and children. On one occasion a European woman was told to close her eyes so she couldn't see it. According to reports the Muslims and Hindus treated each other in about the same way. "Man's inhumanity to man makes countless thousands mourn."

I have been asked by many people about the attitude of India towards Communism. Naturally I am not qualified to answer that. One sees an occasional Communist demon-

stration on the streets of Indian cities. I was told that these were not spontaneous but were put on by people hired for the purpose. I got the feeling that the main thing the Indians want is to be left alone to work out their own destiny without interference from either the Communist world or the Western world. I do believe, however, that they are babes in the woods so far as their knowledge of Communism is concerned and do not realize the dangers of Communism or the world ambitions of the Communists. One must remember that the Indians have created the most mystic religion in the world and that this mystic religion reacts on them to make them more mystic still and therefore out of touch with reality.

How do the Indians assume the responsibilities of government, which were so suddenly thrust upon them when the British left India? I cannot believe that the average Indian knows what government is all about (any more than he does in most countries for that matter). I can only give you an example as related by an American woman who was present when the first elections took place after the British left. She was in a village in which there were two candidates for Congress for that district. People did not know which candidate to vote for. They went to the priest and asked his advice. He went to the temple, put some small offering on the altar before the idols, made some motions, said a few prayers, and came up with an answer in favor of one of the candidates. All the people in that village voted for that candidate.

The Taj Mahal

The Taj Mahal is at Agra, 125 miles south of Delhi. I traveled there over dusty roads filled with all the various impedimenta that can clutter Indian roads. However, it was more than worth it. I think it is the most impressive single piece of architecture I have ever seen any place in any part of the world. Before attempting to describe what is really indescribable, a brief history of it is in order.

Taj Mahal means "Crown of the Palace." It was built by Shah Jehan (the fifth Mogul emperor) as a tomb for his favorite wife, who was called by him Taj Mahal (Crown of the Palace), and who was also called Muntaz Mahal (Jewel of the Palace). She was the niece of Nur Mahal (Light of the Palace), the favorite wife of Jahangir (the fourth Mogul emperor), father of Shah Jehan. Both Taj Mahal and her aunt, Nur Mahal, must have been strikingly beautiful and attractive women. Certainly they wrapped their emperor husbands right around their fingers in spite of the intrigues of the competing ladies of the respective harems. It is certain that Nur Mahal, at least, not only held dominant sway over her husband's harem, but over the emperor himself as well. The incomparable monument which serves as the tomb for Taj Mahal is abundant evidence that she did equally well.

The Taj Mahal, so well known in pictures, is really a poem, a symphony in stone. The grounds are lovely with quadrangular pools in straight lines reflecting the image of the magnificent edifice. The Taj is of white marble, very soft looking. In fact it is so soft looking that on observing it one feels as if he could make a dent in it with his finger. To the left of the Taj is a mosque and to the right a guest house, making the whole pattern very symmetrical. I arrived at sunset and saw it in the varying lights succeeding sunset to darkness. The next day I saw it in bright sunlight. It is beautiful in all shades of light but it is desirable to see it in all of them. The dome of the Taj is crowned with an inverted marble lotus flower. So are two smaller domes. There are four minarets. These are now closed because during the recent disturbances a Sikh pushed a Muslim woman from the top of one, of course killing her. The proportions of the building are beyond compare. The sides are beautifully decorated with inlays of black marble, cornelian, jade, and other semi-precious stones. It is said that the builders built like Titans and finished like jewelers.

The doors at the entrance of the Taj are

of multi-figured bronze. Inside there is a circular marble latticework surrounding the tombs and a circular walkway around this. Everywhere the beautiful marble is decorated with incomparable inlays. There are many inlays of lotus flowers, each flower comprised of dozens of pieces of semi-precious stones. The beautiful marble inlaid tomb of Taj Mahal is in the center of the inner circle and the similar but smaller one of her husband is beside her. (The bodies are actually in the crypt below the tombs but are in tombs similar to those above in the rotunda.) At the tomb an attendant gave me a sprig of latam (sandlewood) leaves, for baksheesh. He also sang a high note and I listened to the beautiful echo from the high dome.

The Taj is on the Jumna River, a tributary of the Ganges and sacred to the Hindus. It is said that Shah Jehan had planned to build a black marble tomb for himself across the Jumna from the Taj but never got around to it. His last days were sad in that he was imprisoned by his son, who deposed him. The imprisonment took place in palatial quarters (which I saw) in a palace called "The Fort" (as is the one in Delhi), which is 1½ miles away from the Taj. This palace was started by Akbar (the third Mogul emperor and said to have been one of the wisest rulers in history) in 1565, continued by his son, Jahangir, and finished by his grandson, Shah Jehan. The palace is almost exactly like the one of similar name in Delhi, except that it is not quite as large. The Star of David is prominent in the architecture. Akbar had Hindu, Muslim, and Christian wives. There are evidences of Hindu architecture—lotus flowers, pigeons, and elephants—in stone of course. Muslim architecture tends to geometrical lines. In Hindu architecture the lotus flower predominates. The place of Shah Jehan's imprisonment was the Circular Pavilion, only about 25 feet in diameter. The Pavilion is of marble and is half surrounded by a semi-circular balcony from which Jehan used to look wistfully at the Taj Mahal, about 1½ miles away. There is a small onyx set in the wall of the balcony in which he could see the reflection of the Taj when he was so old that he could not see that far away himself. The reflection of the Taj can still be seen perfectly in it. What a sad ending for the builder of such a superb monument!

Hinduism

Hinduism is the prevailing religion in India. Buddhism, which sprang from Hinduism, now has comparatively few followers

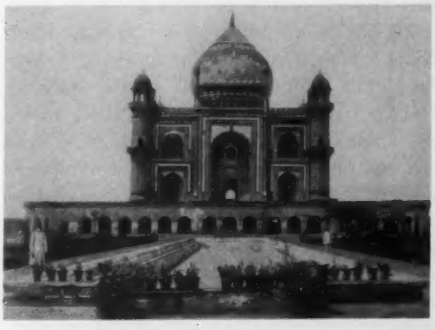


Fig. 2. Safdar Jang Tomb, the minister of Ahmed Shah. Founded by his son, Shuja Uddaula, in A.D. 1753, Delhi.

there in contradistinction to the great number found in Tibet, China, Thailand, and Japan. Hindu temples—large and small, richly built and of poor construction—are everywhere. The better temples are beautiful in design and ornamentation. There are tiled marble floors and graceful columns, often spirally built. The images are covered with rich dresses and jewels, which are frequently changed. As a rule, the temples are open and birds fly through them without disturbing the worshippers. Peasants flock to the temples with offerings of small coins, meat, flowers, or fruit. They pray fervently and fearfully (judging by their expressions) to the idols of wood and stone.

One temple I visited in a poor section had a commanding view of the sea. Lines of beggars were sitting on each side of the street leading to it. There were also shops to sell pieces of coconut to be used as offerings to the images. Looking into the temple I

saw several Hindus kneeling before the images with their offerings of pieces of coconut or small coins in front of them. A priest, evil looking and naked from the waist up, dished out holy water from a vessel with a spoon and put it into the hands of the worshippers. They sipped a little of it and put the rest on their faces and hair. There were a number of kites (they looked like huge crows) flying about the temple.

Of course, anyone going into Hindu temples has to take off his shoes. This is generally not very much of a chore and the floors are as a rule very clean, so one does not mind walking around in his stocking feet. I visited one temple, however, where the streets and alleys surrounding it were wet and filthy, and although the worshippers went into the temple barefooted, they carried quantities of wet mud in with them. Had I taken off my shoes to go in as required, I would have gotten my feet filthy dirty. This I did not do. At any rate, seeing temples in India can be very much overdone just as seeing churches in Europe. I am reminded of a man who had spent some time on the Continent and on arriving in Edinburgh refused to go into the famous St. Giles Cathedral. On being asked why, his reply was, "No more damned cathedrals."

Hinduism as a religion is difficult to describe. There are two main sects in the religion and more than fifty sub-sects, each seeking to obtain salvation with the aid of its own gods and ceremonies. It is believed that the religion of the less advanced Hindus is little more than primitive animism—a belief in spirits of various sorts, some hostiie, some friendly, some neutral. The better organized Hindu religion recognizes a trinity: Brahma, the Creator; Vishnu, the Preserver; and Shiva, the Destroyer. There are many other gods also. Vishnu has had many subsequent incarnations. Buddha was the ninth. Lord Krishna was another incarnation of Vishnu. He has become a god-man with the Hindus and has largely taken the place of Vishnu himself. Krishna came from a noble family and was sort of a Robin Hood for the people—a daredevil who loved fun and the ladies. Of the three gods in the trinity, Shiva has become the most popular. The masses like him because he is supposed to be of their kind—passionate, violent, and licentious. He had a sluttish wife. In his name, or hers, there are secret sects of pious sexual perverts who indulge in all sorts of sex orgies. However, indulgence in erotic practices is not alone a part of the worship of Shiva, but also of Vishnu.

An essential part of the Hindu religion is a belief in not only the transmigration of the soul, but also the transmutation of the body. By leading a good life and praying dutifully, they hope to improve their state in the next life. If they have led an extraordinarily good life, they might be princes or even brahmins in the next life. If they have led an evil life, they may return as dogs, pigs, insects, or even as slimy weeds on the edges of swamps. There is a sense of hopelessness in their entire existence. The idea of transmigration is a weary round of endless life. They believe that if they die on the banks of the Ganges (Holy Ganga), they will escape further transmigration and enter Nirvana—a state of nothingness, which to them means a state of peacefulness. It can readily be understood how people with such a dismal outlook have little fear of Communism. At its worst it can hardly be very much worse than what they already have.

One way of obtaining salvation is in a complete renunciation of all worldly goods. Frequently "holy men" may be seen on the street with nothing on but a loin cloth. They would not wear that except that the law requires them to wear that much. Sometimes their entire bodies are covered with chalk. These men live by begging and have nothing except what is given to them. They seldom want, however, because it is considered a good deed to contribute to them.

An essential part of the Hindu religion is a belief that it is wrong to kill animals of any sort. Cows, of course, are sacred and run wild every place, except in Bombay, where they are kept penned up in order to

keep them from being nuisances by wandering around the streets ad libitum. In other places they are real nuisances because they get in the way of pedestrians, cyclists, and motorists. If a motorist hits one, he is in real trouble. Cow's milk is used for food but not the meat, except by a very few people. Although oxen are also sacred, they are used to draw carts.

India is full of monkeys and they are often a great nuisance, stealing and breaking up the slender possessions of the inhabitants. They will steal anything they can get their hands on in people's houses and carry them up into a tree or out into the plain. However, the Hindus won't kill them. When they become too much of a nuisance in a certain village, the villagers collect all the monkeys in their village, take them some distance away and turn them loose to be a nuisance in another locality. One way of doing it!

Many devout Hindus wear gauze masks over their faces to keep from inadvertently breathing in a gnat and thus smothering their grandmother. They will also often sweep a path in front of them to keep from stepping on an ant and killing their grandfather.

Orthodox male Hindus often have their hair clipped short except for a long tuft of hair at the vertex of the scalp—something to pull them into heaven with, should everything else fail.

Neither Hindus, Buddhists, nor Zoroasters have any sabbath or rest day, but have numerous religious holidays. One surgeon told me that he played golf early every Sunday and then operated from 10:00 A.M. on upon patients who liked to take advantage of the holiday (to some people) to have their operations done.

The Ganges may be considered the center of Hindu life. It is the holy river to which every devout Hindu wishes to make a pilgrimage. Many old or sick Hindus make every attempt to get to the banks of the Ganges, even if they have to creep or crawl, in order to die on the banks of the sacred stream (or its sacred tributary, the Jumna) and thus escape further transmigration. In view of its importance in the life of Hindus, an account of a visit to it is worth recounting.

I left my car in the center of Benares and walked through a crowded street to the Ganges. Sitting on the ground crosslegged in rows in the street were many barbers with their customers sitting facing them in the same manner. All of the customers were having their heads clipped close except for the tuft of long hair left at the vertex. They had their hair clipped so it could grow out in this holy area. Some women were also having theirs clipped. Many people were coming from the temples with their foreheads painted. The painting is done by the priests as some part of their religious ritual. Many were uttering some sort of cries about Shiva or the Ganga. There were many priests looking just a little bit more stupid than the rest. Some were cleaning their teeth with neem tree twigs.

This is the holy land of Shiva, the Destroyer. He is shown in some of his statues with eight arms pushing devils away. Everything has to end in destruction so he bosses the job. If he can kill the devils without a drop of blood touching the ground, no more will spring up. One drop of blood did touch the ground, a devil sprang up, and Shiva crushed it with his foot. He caught the blood from the other devils in a cup and drank it.

Reaching the Ganges, I got into a boat with a guide and a number of rowers and we rowed up and down the stream in order to get a good view of the religious antics which were going on, both on the banks and in the stream itself. The buildings along the banks were mostly the former homes of maharajas, which are now being principally used by the government as rest houses for pilgrims. The government is gradually taking over the estates of the maharajas. Some of the latter are being paid relatively small salaries for some government work and some have gone into business.

The stream itself all along the bank was full of bathers, many more men than women. Some went in with all their clothes on. Most

of the men had on only a G-string or a very thin pair of shorts. All were washing themselves. The women were in saris. In washing themselves, occasionally a breast would flop out, which they didn't seem to mind at all. This is unusual in India, because as a rule the female breast is not exposed and even doctors have trouble in examining the upper part of the body, but not the lower part. Those who were not soaping and washing themselves were washing their clothes. The water was very muddy and extremely dirty. It looked thick enough to cut with a knife. In one spot I saw the body of a dead dog floating, so bloated that it looked as if it were about to burst. Some of the people were drinking this water, brushing their teeth with it, gargling with it, mumbling prayers, and making funny signs at the water with their hands. They take jugs of it home with them for use after leaving the sacred place.

My Hindu guide told me that it had been "scientifically proven" that the water of the Ganges killed bacteria. I am generally polite to foreigners when I am a guest in their country, but this was too much for me, and I am afraid that I was a little explosive in telling him how silly and stupid such a notion was. Naturally he could give no account of the experiments involved in producing the "scientific proof." Later on he told me that the city water of Benares was taken from the Ganges and used after being filtered and sterilized. When people are this crooked in their thinking, is it any wonder that they are politically somewhat muddled? The wonder is that they have done as well as they have.

On the banks of the river at various spots were the burning ghats (ghat means wharf or landing) where cremations take place. (The Hindus always cremate, while the Muslims bury their dead.) The body is first dipped in the Ganges and then burned on the ghat in the open. It is apparently a perpetual process. There were some bodies waiting on the banks and others being burned. The ashes are then thrown into the Ganges. Children under three are not cremated, but

FIG. 3. Moti Masjid, or Pearl Mosque. Built in in A.D. 1622 by Shah Jehan.

their bodies are weighted and thrown into the Ganges. Everyone keeps some of this filthy "holy water" at home.

Cremation takes place only a few hours after death. On the streets one frequently sees bodies on the way to burning ghats. They wrap the women in blue and the men in white. A man may be seen taking his dead wife to the ghat in a cart, or even on a bicycle, or carrying her on his shoulder.

Going ashore again, I went to a small Shiva Temple, 400 years old, which is also called the Love Temple. Outside the temple there were many monkeys playing in the trees. This was very appropriate because of the "monkey business" depicted in the temple carvings. The architecture of the temple showed Chinese influence. The wood was of Indian teakwood.

Below the cornice there were many carvings depicting love scenes. One showed a bride and groom, the groom with his hands on his wife's breasts and she with hers on his genitals. Another showed a man caught in the act of adultery by his wife, who was pulling the hair of the adulteress and asking her to leave—not very gently, I fear. Another shows a man with two wives, both of whom are contending for his attentions. Inside the temple there is a huge lingam (penis)—a symbol of Shiva—inserted into a huge vagina. There is also a huge upright lingam in a corner of the small courtyard of the temple. The linga are often stroked by

women to cure them of sterility.

I then passed a house where poor widows live. They were chanting praises to their gods—probably to escape boredom. Hindu widows are not allowed to remarry.

Many of the streets of Benares are filled with beggars, filth, and cows. The beggars carry baskets to receive gifts from the populace. A man threw some grain into a basket of one of the beggars and some of it spilled on the ground. The beggar picked it up from the dirty ground and ate it. A cow defecated almost in his basket, the feces spattering over him, but he didn't move an inch. They don't mind handling cow dung, but it is almost impossible to get a servant to wash a dog because it is "unclean." They handle cow dung with their hands all the time and plaster it against walls to dry in order to use it for fuel.

I saw many priests stripped from the waist up, sitting, meditating, and looking unutterably stupid.

No matter what evils may be attributed to Hinduism, it does seem to have one virtue which we cannot very consistently claim for Christianity, namely toleration. Hinduism has never conducted any Inquisitions. It does seem to have its seamy side though, because I passed through a little village between Delhi and Agra in which Lord Krisna was born. This entire area is sacred to the Hindus. Christians have a hard time there because the Hindus believe they pollute the sacred area. Hindus won't sell Christians salt and abuse them in other ways. However, this is mild treatment compared with that doled out by Christians to Christians during the Inquisition, and at other times in our own history, such as those of the Salem witch burnings.

Parsees

"Parsee" is a corruption of "Persian." Parsees are Persians who migrated from Persia to India 1200 years ago. They were Zoroasters who left Persia in order to escape religious persecution when Persia became Muslim. They have kept their religion and race intact. They do not intermarry with any other people except in rare instances. If a male Parsee marries into another faith, his children are Parsees, but if a female does her children are not Parsees, although she is allowed to stay in the faith. There is no proselytism—no outsiders are allowed to become converts. A prominent Parsee in Bombay told me that he had never heard of but one Parsee becoming a convert to another faith, and that man became a Christian when the English first came to India and tried to convert everybody to Christianity. The Parsees form a very compact group. Many of them are very rich and in their group are some of the most prominent business and professional men in India. They are very charitable people. There are now only 100,000 Parsees in the whole world, 50,000 being in Bombay. There are 250 in the United States. The Parsees in India believe that those in the United States will probably disappear by intermarriage.

The importance of the Parsees in India is entirely out of proportion to their numbers. Their culture, honesty, and benevolence are by-words in India. Their prosperity however exposes them to the envy and jealousy of certain elements. I was told by a prominent Parsee doctor that the present government is trying to squeeze the Parsees out—forcing them to give up various businesses, properties, etc.

The religion of the Parsees (the Persians) is Zoroastrianism. This was founded by Zoroaster (Zarathustra—see Nietzsche's "Thus Spake Zarathustra"), who lived in Persia about 1,000 B.C. Zoroasters are commonly known as fire worshippers. However, the Parsees say that fire is only a symbol of God. They keep fire going perpetually in their temples. When a new temple is built, the fire is started by fire brought from another temple, so each fire is a descendant from that fire which was originally started by Zoroaster. No one but a Parsee is allowed to enter their fire temples. They pray five times a day and have three precepts: see no evil, hear no evil, speak no evil.

Parsees have a unique way of disposing of their dead—the bodies are exposed to be devoured by vultures. This rite takes place on the top of the Tower of Silence. No one but the pallbearers is allowed to go to the actual tower, which is generally out of sight, hidden by trees. The family stays behind in a temple. The pallbearers accompanied by four priests in white take the body to the top of the tower. The priests say the last prayers for the dead. Then they take the clothes off the body and leave. Within an hour the bones are picked clean by vultures. The bones are then allowed to fall into a receptacle that destroys them chemically and the residue is washed out to sea.

Medicine

The hospitals in India follow the British system, which is natural, their having been under British rule for so long. Operations on private patients are done in nursing homes as in England. These are really small private hospitals. Their hospitals proper are all public institutions. I operated in a nursing home, a hospital (public), and in an American mission hospital, so had an opportunity to get first hand information about all three classes of hospitals. Until the British left India, almost everyone who went abroad to study medicine went to England. Therefore, most of their highly trained surgeons were trained in England.

Through the courtesy of Dr. R. N. Cooper, of Bombay, I operated on several private patients in Dr. Bacha's Memorial Nursing Home. The house staff in the Nursing Home was meager and inadequately trained. Dr. Cooper was kind enough to give my anesthetics for me (spinal) and then assist me in my operations. I had no other assistant. The elderly Indian scrub nurse, however, was very efficient and handled instruments and sutures beautifully.

My first operation was done early in the morning on an elderly man with a large scrotal inguinal hernia. I left the usual orders for the patient to be up as soon as the anesthetic wore off, and especially instructed the nurses to get him up to void. I went back to the Nursing Home that evening to see how my patient was getting on. He had a large private room with a large bath adjacent. The room was full of relatives. There were also two nurses (special) and two house doctors there. The patient was complaining of not being able to void and of intestinal gas which he couldn't pass. I asked the nurses and doctors why he had not been gotten up as ordered. They simply threw up their hands and grinned—weren't used to getting patients out of bed so soon after operation. I first got all the relatives out of the room and then got the patient out of bed. The two nurses and I walked him into his private bath and had him sit on the stool. He immediately voided and soon started an artillery barrage of passing flatus. I said to the nurses, "That is music to our ears, isn't it?" They laughed heartily and the patient said, "It is to mine also." The nurses, doctors, and family were amazed, not only at getting the patient up so soon after operation, but also at the immediate relief.

I operated on another patient in the same Nursing Home late one afternoon. I was called at my hotel at 2:15 o'clock the next morning by the patient's wife, who said that he was raving with pain. I talked with the house doctor over the telephone and he seemed helpless. There was nothing for me to do but get out of bed and go to see the patient. When I got to the Nursing Home, he was asleep. He had voided and had had only one dose of a narcotic. His temperature, pulse and respirations were normal and his belly was soft. The alarm was a completely false one and my disturbed sleep was entirely due to the inexperience of the house man.

I found my patients however to be very courteous, cooperative, and grateful. One elderly woman upon whom I operated for a huge pendulous incisional hernia which contained the bladder, and because of bladder obstruction necessitated frequent catheterizations, was very grateful for the result and touched me deeply when I went to say goodbye to her in the Nursing Home. As I said goodbye, she put a lei around my neck and handed me a beautiful bouquet. I thanked

her and said that the flowers were lovely. She said, "You are lovely" and made affectionate signs—very moving.

I lectured at the Seth Cordhandas Sunderdas Medical College. There are 450 medical students, about half of them women. Associated with this medical college is the King Edward Hospital (public). This hospital has 550 beds and 100 "biscuits" (pallets on the floor). The latter reminded me of my service with the British in World War I. Nearby there is a children's hospital, a maternity hospital, and a cancer hospital.

At the request of Dr. Munsif, one of the Honorary Attending Surgeons (the title follows the English system), I operated in the King Edward Hospital. The case was supposed to be one of bilateral inguinal hernia. (Dr. Munsif wanted me to demonstrate the tantalum gauze technique.) There was a reducible scrotal mass on the right side with all the earmarks of hernia. I made the usual right inguinal incision. On opening the cord in order to look for the sac, milky fluid ran out indicating filariasis, which is prevalent there. I had inadvertently operated on a case of filariasis, but was glad to see what the inside of such a case looked like. I then made a LaRoque muscle splitting incision about an inch above the internal ring and put my finger into the abdominal cavity in order to make sure that there was no hernia present. I could find none, neither direct, indirect, nor femoral. None of the spectators had ever heard of a LaRoque incision and they were as glad to see that as I was to see the inside of a case of filariasis. On the left side there was a direct hernia, which I repaired by placing the cord in the original Halsted subcutaneous position and reinforcing the floor of the canal with tantalum gauze.

The facilities of this hospital were meager compared with those in our own public hospitals. Under their socialistic system the patients are supposed to get completely free medical care, but I was told that they do not always get it. They have to pay sweepers, nurses, and doctors, but of course no receipts are given and they are afraid to talk about it for fear of getting no treatment at all. I, of course, had no way of verifying this report.

The American mission hospital in which I operated was the Philadelphia Hospital at Ambala City in the Punjab, which is run by the Presbyterian Church. The surgeon and director of the hospital is Dr. Paul, a Christian Indian. The hospital has only 80 beds and it has been operating for a number of years without any running water. Running water was in the process of being installed while I was there. Most of the cases I operated upon there were hernias, one a strangulated scrotal hernia, which came in while I was at lunch. There were 18 inches of very red ileum, but resection was not necessary. One case was that of a 13-year-old boy with intestinal obstruction. The mission doctors had seen a lot of these cases so knew what the obstruction was caused by. I did not. I operated and found tuberculosis of the cecum with four separate and distinct tuberculous lesions in the terminal ileum. I did a sidetracking operation, anastomosing the ileum proximal to the lesions to the transverse colon. I would have resected, but the doctors on the staff who had had a lot of experience with these cases told me that they do very well with this type of operation, giving them anti-tuberculosis drugs postoperatively.

Another patient I operated upon here was a crusty, rich, fat, 59-year-old Sikh Sardar. He had two wives. The only one I saw was young and pretty. She was around the hospital all the time. The other one was said to be old and not so pretty. He kept her away from the hospital.

This hospital is doing a magnificent job with very little equipment. For instance, while operating I asked for a pair of ring forceps for handling the intestines. I found they had not a single pair in the hospital. The only general anesthetic agents available are ether and chloroform. They have no oxygen or gas of any sort.

When the Mission Hospital was first opened, the patients wouldn't sleep on the hospital mattresses but brought their own.

They were afraid that possibly the mattresses had previously been slept on by a sweeper, and that they would lose caste. With the gradual obliteration of the caste system (originally introduced to protect the white invaders of India) the patients are now glad to accept what the hospital offers. The hospital now has quarters for the accommodation of families of patients. As a rule, the families feed the patients and are careful to follow the doctor's instructions as to diet.

The operating room technique in the hospitals in which I worked was, to say the least, different from ours. Scrubbing before operations is crude—ordinary soap and alcohol. In the mission hospital we did scrub with phisoderm, but there was no running water. In putting on their gloves, surgeons think nothing of touching the outside of them with their bare hands. Spectators are constantly touching the elbows of surgeons. This happened to me at my first operation. I asked for a sleeve—there was none. After that I was careful to keep my elbows away from the table. The instrument nurses brush the fronts of their sterile gowns against the nonsterile backs of surgeons and think nothing of it. Being used to silk, I used it, but found that my assistants, who were not used to it, constantly broke it in tying, although the silk was of good quality.

The diseases seen in India are entirely different from those seen here. One not only finds the diseases seen here but many others besides. Name the disease and they will show it to you. There is much typhoid and tetanus, now rarities here. Surgical tuberculosis is very prevalent—glands, bones, joints, and intestine. Pott's disease is very prevalent. Spinal fusions to correct this are common. So is osteomyelitis a very common disease.

There are many cases of osteomalacia associated with pregnancy, probably due to anemia, poor diet, and vitamin deficiency. There are many cases of very severe anemia —often associated with pregnancy and malaria. The hemoglobin goes down to 10% and the red blood count to below a million. These patients almost never get transfusions. The people are afraid of it—superstitious. They use liver and iron and some of them get well.

I saw a little girl with noma—cancrum oris—with loss of the right cheek, maxilla, and mandible. She was undergoing plastic surgery, but could never marry due to the blemish.

One day while I was operating at the Mission Hospital, a case of cholera was brought in. The patient had been stricken only the night before but died before he could be taken to the ward. These cases become tremendously dehydrated almost at once from vomiting and diarrhea. If they can get intravenous fluids into them fast enough, they save some of them. They have at times had 50 or 60 cases of cholera at one time in the Mission Hospital.

On leaving the Mission Hospital one day I met a young woman being lead in who was obviously in great pain. She had a huge ophthalmic tumor, which was cylindrical in shape and which projected 2½ inches from the eye socket with the deformed eye located at its distal end. One of the mission doctors told me that tumors of that type are common in India but that the patients generally come too late for treatment. As a matter of fact, they come too late for treatment with almost everything. The ophthalmic tumors are sarcomas, and if they receive treatment early enough, the whole thing can be scooped out before metastases occurs.

Conclusion

As in the Middle East, I felt that the Indian people were very friendly towards the American people but that they were very suspicious of our government. They certainly do not have the same reasons to be suspicious that the Middle East has. What then is the reason for their suspicion? And this in spite of the fact of all the aid we have given the Indians. That is one of the many imponderables which we are facing today. One cannot help wondering, though, how much good our foreign aid does. The

only country which I have visited in which I thought it was really appreciated was Austria. I think also that what little aid we have given the South American countries is appreciated there. One might well ask the question: Are we not paying too much attention to alien people with civilizations and cultures entirely different from ours, when we should be trying to effect the solidarity of the Western Hemisphere by paying more attention to our neighbors here who are of the same race, traditions, culture, and civilization?

While in India I went to a beautiful Fourth of July party at the American Embassy. The grounds and trees were beautifully decorated with red, white, and blue electric lights. There was music, soft drinks, sandwiches and other refreshments for the 1900 people present. This was fine, but does it touch the people? I got the distinct feeling throughout India that our diplomats do not touch the lives of the Indian people and that they make little impression upon them. Certainly that is not true of the medical missionaries. They live with the people, work with them, treat them, know how they live, know what they are thinking, and get to know them thoroughly in every way. All through Asia I felt that our medical missionaries were our best ambassadors. It is my feeling that our State Department should take a leaf from their book, and instead of keeping their staffs around the capitals, where the official business and parties are, they should be sent out all through the countries they are assigned to and really get to know the people on a social as well as on a business basis.

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FLAG DAY—JUNE 14

PLEDGE OF ALLEGIANCE TO THE FLAG

"I pledge allegiance to the Flag of the United States of America and to the Republic for which it stands; one nation under God indivisible, with liberty and justice for all."

EDITORIALS

Our Convention

PROFESSIONAL Excellence—The Criterion of Military Medicine is the theme for our 64th Annual Convention to be held at Hotel Statler, Washington, D.C., October 28, 29, and 30, this year.

The president of our Association, Colonel Amos R. Koontz, the general chairman, Major General Paul I. Robinson, the program chairman, Colonel Robert C. Kimberly, and their committees have been working for months now arranging all the details for this annual get-together.

Much has been accomplished to provide an excellent program. We are not ready to release the details yet. It is a little too early for that step. But it is not too early for you to plan to attend this fall meeting. The Hotel Statler is holding a block of rooms for those who desire accommodations there. In asking for reservations be sure to mention that you will attend our convention. This will assure you a room, otherwise you may be disappointed in obtaining reservations.

This paragraph is for the ladies. Mrs. Charles S. Gersoni is chairman of the Ladies' Committee. She assures us there will be plenty of events, including the traditional luncheon, yet there will be time for shopping or visiting places of one's own choice.

Make your plans now. Washington is a fine place to visit, especially in the fall, and our convention always has much to offer.

Men with Vision

PAN-AMERICAN WEEK was observed this last April in San Francisco with envoys from all twenty-one American Republics. Various functions in many cities during the week emphasized the strong bonds of friendship which exist between the good neighbors of the Western Hemisphere.

The strength of the Organization of American States has not been due entirely to the efforts of able government officials. The roles of professional people, among whom we cite the ophthalmologists as "Medical Ambassadors," have played no little part in cementing the relationship of the North, Central, and South American countries.

It was appropriate and perhaps not coincidental that the Fourth Interim Congress of the Pan American Association of Ophthalmology gathered in New York City during *Pan-American Week*. In a joint meeting with the National Society for the Prevention of Blindness there were over one thousand registrants representing the specialty of ophthalmology in the twenty-one Nations.

A varied program of medical and surgical subjects with active English and Spanish translations held the interest of large audiences. The meeting was introduced by Doctor Brittain F. Payne, the Association's able and active president, and there followed notable speakers among whom were Mayor Robert F. Wagner of New York City, Mason H. Bigelow, Assistant Secretary of Defense Frank B. Berry, Major General Dan C. Ogle, Surgeon General of the U. S. Air Force, Dr. William L. Benedict, and Dr. M. E. Alvaro.

Dr. Howard A. Rusk addressed the formal Conference Dinner with a timely subject, "Doctors as Diplomats." The Army was represented in the exhibit section by an interesting display depicting the top Walter Reed Ocular Research Unit's original work on "Corneal Preservation." The School of Aviation Medicine showed its new studies on "Ionizing Irradiation."

Such conferences should be encouraged world-wide. The medical profession, interested in alleviating the physical infirmities of all men, has a common meeting ground for all nations.

Highway Slaughter

AN EXCERPT from an article which appeared recently in the *Bulletin of the American Association of Motor Vehicle Administrators* emphasizes again the need for a forceful campaign for highway safety.

"The traffic death toll in the United States for 1956 was estimated by the National Safety Council on January 4 at 40,200.

"That is the greatest number of traffic deaths in one year in the history of the Nation, exceeding the previous record of 39,969 in 1941. The 1956 total was about 5 percent and more than 1,700 lives greater than the 1955 traffic death toll of 38,426."

The Armed Forces have their share of these fatalities. Many of the accidents have no connection with the actual performance of duty of the individual; many occur while on pass or leave.

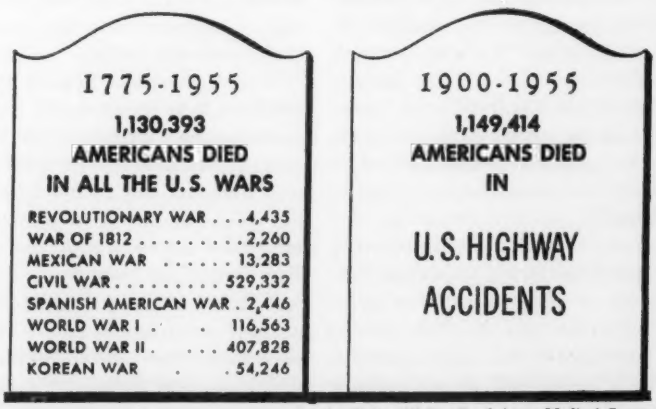
The Air Force recently developed a plan to give drivers under 25 years of age 10 hours of classroom instruction in the interests of better driving habits.

Too frequently insufficient time is allowed for overcoming the miles to be covered. This leads to frustration, the person is mentally out of tune, chances are taken behind the wheel of a powerful vehicle. Lives of others and the life of the individual who takes the chance are endangered. Death or permanent severe injury result.

How shall this important problem of highway fatalities be attacked? Pointing out the dangers alone does not seem to be the answer. That has been done by radio, television, newspapers, and magazines. We must begin to talk less about speed and horsepower, we must begin to talk more about road courtesy, and probably we must inflict more severe penalties, among which there should be more revocations of licenses.

It is time highway slaughter in America is reduced.

A Grim Reminder


1775-1955
1,130,393
AMERICANS DIED
IN ALL THE U. S. WARS
REVOLUTIONARY WAR . . . 4,435
WAR OF 1812 2,260
MEXICAN WAR 13,283
CIVIL WAR 529,332
SPANISH AMERICAN WAR . 2,446
WORLD WAR I . . . 116,563
WORLD WAR II 407,828
KOREAN WAR . . . 54,246
1900-1955
1,149,414
AMERICANS DIED
IN
U. S. HIGHWAY
ACCIDENTS

Service Stripe, Walter Reed Army Medical Center

Around the World

(Ser. II, No. 10)

By

CLAUDIUS F. MAYER, M.D.

JUGOSLAVIA has made great progress in the development of her health services. Measured by the number of beds, the hospital facilities are today twice as large as in the prewar years. Yet, the *number of physicians* is still low. The country has 17 million inhabitants who are taken care of by somewhat less than 10,000 physicians, one fifth of whom are specialists. The general practitioners are scattered in Serbia proper (3,850), Croatia (2,750), Slovenia (1,150), Bosnia and Herzegovina (550), Macedonia (400), and Montenegro (140). The older medical faculties are attached to the universities in Beograd, Zagreb, and Ljubljana. New medical schools were built in Sarajevo and Skopije. These institutions have graduated about 4,000 physicians since the end of World War II.

The *health institutions* are managed in the form of a *self-government.* Their administrative boards are composed of the representatives of the working collective of the institutions. The professional work is, however, under the control of the medical departmental chiefs alone. The administrative board also includes delegates from the city or district, from the Central Social Insurance Office, and the major economic establishments of the area. Every institution fixes its fees, collects the money, and disposes of it independently.

Social Insurance is also a self-governing body in Jugoslavia, but it does not have medical service or health institutions of its own. The physicians and hospital services have to be purchased by the Social Insurance Office. Thus, it is believed, the physician is left free in his diagnosis and treatment of his patients. Though the Constitutional Law of 1953 authorizes private practice, such an activity is now occurring less and less.

Of the diseases in Jugoslavia, we should mention two especially at this time. In the Jugoslav Army, *carriers of Endamoeba histolytica* cysts are a real problem. They are found in 5.6% to 63.8% of the soldiers. Apparently healthy soldiers who handle food materials were found infected in 13.3% as the average. The *Latrodectus spiders* occur all over the world, be they called "black widows" in the Americas or "black wolves" (karakurt) in Southwestern Siberia. Since 1948 they have been the cause of many accidental bites among the *harvesters in Jugoslavia,* especially in the Istria province. Often, the volar side above the left wrist was the bitten part of the body; this is the part of the forearm that harvesters the sheaves rest on when binding them. The spider venom, which is neurotropic, is allegedly 15 times more dangerous than the venom of rattlesnakes. Of all forms of treatment, the simultaneous application of calcium, antivenom, and sometimes procaine infiltration for relief of pain, give the best results. Treatment with antivenoms is still in the experimental stage.

British physicians (Dobbs et al.), who recently had an opportunity to visit *Poland,* paint a rather pitiful picture of the *medical practice* of this noble country, devastated by two wars, forcibly occupied by its neighbors for years, and impaled by the Communists who tried to disintegrate the nation's whole life. Poland's population is about 27 million, and the country is getting its socialized medical service from about 16,000 physicians. Warszawa itself, with about a million inhabitants, has about 2,300 doctors, and is better off than the rural areas where doctors are scarce and transportation is deplorable.

The financial status of the *Polish medical profession is lamentable,* and the doctor's

earnings are at the same level as that of the manual workers, with a monthly income between 1,000 and 5,000 zlotys. The lower figure means plain starvation, while at the higher figure the doctor must still help himself by engaging in two or three part-time positions. The average salary of the nurses is less than 1000 *zlotys;* hence, this profession is in the hands of the less intelligent and less suitable types.

During the last few months, private practice has not been officially discouraged, but its earnings are very highly and capriciously taxed. In the towns, the general practitioner has virtually ceased to exist. The inhabitants are cared for by *health centers* on a clinic and home-visiting basis. A center is designed for the care of 5,000 inhabitants, and it has one physician as a staff. He arrives at seven, treats the waiting patients for 3-4 hours, then makes home visits according to a long list, which usually takes more than his officially scheduled working time. He is not provided with any transportation. Work in the National Health Service clinics of Poland is unrewarding, irremediably dull, and it is without any good relationship between patient and doctor.

The orthodox *communist doctrine* rejects the principle of birth control on the ground that it is a "capitalist fairy tale" to talk of overpopulation and food shortage as the Malthusian theories do. Yet, the communists have suddenly changed position and they began to preach the "merits" of scientific birth control. In Poland, Hungary, and also in Bulgaria, *abortion became legalized* for "social" as well as for medical reasons. The change came in the spring of 1956. Of course, it tells too much when in a society the only solution that a mother can find is to kill her unborn child. Where is the social progress here? In a Hungarian town, in Pécs, after the publication of the abortion decree, about 100 women applied daily to the special committee of physicians who are empowered to authorize abortion. The special surgical clinic which was set up for abortion proved too small and a ward of the local military hospital had to be requisitioned as an annex. In Bulgaria the elective abortion was legalized, but it costs the woman 50 *levas* (about $7.00) for obtaining a license for it.

The *Baltic States under Soviet occupation* are in continuous unrest according to the reports arriving from Estonia, Latvia and Lithuania. The youth of these countries is generally anticommunist. There is a general *decline in the population* of these Baltic states the main causes of which are Soviet deportations as well as other forced migrations, and extermination of the people. Thus, for instance, at the end of 1944 the native population of *Lithuania* was 2,907,000 while at the end of April 1956 it was 2,296,000. During 1945-1950, communists deported 320,000 persons. Each year the Soviet Army takes an average of 25,000 men, many of whom, after 3-4 years of service, are forced to reside in the newly colonized regions of Russia. Moreover, since 1954 young Lithuanians have been continually forced to the virgin lands of Siberia, to the co-called *"Krushchev farms"* and to the various mines. To their own country, they are lost at a rate of 5,000 yearly. Their place is taken by Russian "colonists" who now count some 400,000 heads in Lithuania.

With the arrival of the *season of thunderstorms,* let's recall the unusual *mass accident by lightning* during a storm that occurred in England in the vicinity of the Ascot race course, and was fully described about a year ago. About 46 of the people who were near a tea-stall were thrown to the ground by the lightning, some became unconscious or dazed. Two died from head injuries. Many had retrograde amnesia; others remembered a simultaneous flash and thunder, and a few felt a blow on the back of the neck. Many complained of paresthesia in one or more limbs, which in a few people persisted for several weeks. Fifteen persons had typical burns, showing "feathering," flash, erythema, even charring. Most of the people, however, did not complain of residual symptoms.

According to a Swiss medical journal, there is no more doubt that *Führer Hitler is*

dead. His dentist, who was taken prisoner by the Russians, remembered the bridge work which he prepared for the Führer and for Eva Braun in July 1944. In 1945, after the fall of Berlin, Dr. Echtmann, the dentist, had to draw *the bridgework of Hitler* for three Russian dentists who then produced a number of unidentified skulls in two of which Dr. Echtmann recognized his prosthetic work on Hitler and Eva Braun. He was then immediately sent to the Vorkuta concentration camp in Siberia. Recently, the dentist returned from Russian captivity, and he deposited his statement under oath in the Court of Berchtesgaden where Hitler was then officially declared dead.

The *British medical profession* feels very dissatisfied with the way the *medical remuneration* is handled by the British Government. There is no doubt that the value of the British pound is now less in purchasing power than it was six years ago, but it is also almost certain that the government could not now pay 60 million pounds, or whatever the sum is that the British doctors mention, as a back claim. The doctors in general are afraid (as it is evident from their many letters) that they will drop on the social scale in relation to other professions, and they accuse the government of breach of the pledges. This brings up the question in their minds whether any professional man can work for a government which can behave in this fashion.

In early March it was proposed that all general medical practitioners *would withdraw from the National Health Service.* In the interpretation of British doctors this does not mean a "strike." If such an action would wreck the National Health Service, then the medical profession would blame it on the British Government. By the way, the government of Great Britain recently proposed a 5% higher pay for the doctors from the first of May on. The basic difficulty remains still unsolved, and the British medical profession keeps on feeling bitter.

Against the procrastinating tactics of the British administration a certain "J.B." composed a poem, entitled *"The Hypocritic Oath"* (sic!), sung by the government, which ends with the allusion that

"If we judicially procrastinate
They can cool their heels till '58.
Thus by tactics rather questionable
Enough will soon be pensionable
To that awkward generation.

....

Macmillan's are publishing a book next May
On How to make your patience pay.'"

—*Multa paucis!*

"The atomic bomb brought peace but only men can keep it."
WINSTON CHURCHILL, August 16, 1945

SUSTAINING MEMBERS

It is a privilege to list the firms who have joined The Association of Military Surgeons as Sustaining Members. We gratefully acknowledge their support.

ABBOTT LABORATORIES
ASTRA PHARMACEUTICAL PRODUCTS, INC.
AYERST LABORATORIES
BAXTER LABORATORIES, INC.
BECTON, DICKINSON AND COMPANY
BURROUGHS WELLCOME & CO. (U.S.A.) INC.
CIBA PHARMACEUTICAL PRODUCTS, INC.
COOK-WAITE LABORATORIES, INC.
CUTTER LABORATORIES
EATON LABORATORIES, DIVISION OF THE NORWICH PHARMACAL CO.
GENERAL ELECTRIC COMPANY
HOFFMANN-LA ROCHE, INC.
JOHNSON & JOHNSON
LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID CO.
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MEAD JOHNSON & COMPANY
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PARKE, DAVIS & COMPANY
PFIZER, CHAS. & CO., INC.
PICKER X-RAY CORPORATION
PROFEXRAY, INCORPORATED
RITTER COMPANY, INC.
SCHERING CORPORATION
SEARLE, G. D., & CO.
SQUIBB, E. R., & SONS, DIVISION OF OLIN MATHIESON CHEMICAL CORP.
STEPHENSON CORPORATION
STERILON CORPORATION
WARNER-CHILCOTT LABORATORIES
WINTHROP LABORATORIES, INC.
WYETH LABORATORIES

ASSOCIATION NOTES

Timely items of general interest are accepted for these columns. Deadline is 3rd of month preceding month of issue.

Department of Defense

Ass't Secretary (Health & Medical)—HON. FRANK B. BERRY, M.D.

Deputy Ass't Sec'y—HON. EDW. H. CUSHING, M.D.

DOCTOR-DRAFT

Time is running short to provide a substitute measure for the present doctor-draft act which will expire on June 30. It is unlikely that this act will be extended. More doctors among the recent graduates are available for the armed forces under the present Selective Service laws; however, there will be a need for physicians in the specialty groups.

Army

Surgeon General—MAJ. GEN. SILAS B. HAYS

Deputy Surg. Gen.—MAJ. GEN. JAMES P. COONEY

MEDICAL SPECIALIST CORPS INSTITUTE

At the fifth semi-annual Institute for Army Medical Specialist Corps officers held at the Walter Reed Army Institute of Research in May the problem of intercommunication with those caring for the patient was studied.

The Medical Specialist Corps personnel have three phases to consider within their own sphere of patient care: physical therapy, dietetics, and occupational therapy.

Representatives of the National Training Laboratory in Group Development participated in the program.

CONSULTANT TO SURGEON GENERAL

Lt. Col. Edward J. Dehne, MC, Commanding Officer of the Army Environmental Health Laboratory, Army Chemical Center, Maryland, has been designated as consultant to the Surgeon General in the field of Occupational Medicine.

Colonel Dehne is a member of the Founders Group in Occupational Medicine. He is a member of the American Board of Preventive Medicine and Public Health, a Fellow of the American College of Preventive Medicine, Industrial Medical Association, and the Royal Society of Health.

ASSIGNED TO HISTORICAL UNIT

Lt. Col. Hortense E. McKay, ANC, who has been Chief of the Nursing Service, U. S. Army Hospital, Fort Eustis, Va., has been assigned to the Historical Unit, Army Medical Service, Forest Glen Annex, Walter Reed Army Medical Center. Her duties there will be in connection with the history of the Army Medical Service during World War II, particularly with reference to the training of nurse officers.

Colonel McKay is an Army careerist of 21 years service. She has been Director of Nursing, Army Medical Service School, Fort Sam Houston, Texas, and holds a B.S. degree from the University of Minnesota with a major in nursing education.

COLOR TELEVISION AT DENTAL MEETING

Dental Corps officers from Walter Reed Army Medical Center presented a unique educational program for the 25th Annual Postgraduate Clinic of the District of Columbia Dental Society. Live color television presentations were transmitted on a closed

circuit to the Shoreham Hotel, Washington, D.C., through the television facilities of the Walter Reed Army Medical Center.

The program was under the direction of Brig. General Arthur L. Irons, Chief of Dental Activities at the Walter Reed Army Medical Center, and Colonel Thomas A. McFall, Director, Division of Dentistry, Walter Reed Army Institute of Research. There were approximately 500 dentists present to view the telecast each day of the clinic.

HONORED

Colonel Byron L. Steger, Chief, Education and Training Division, Office of the Surgeon General, was cited as an outstanding alumnus at the recent Medical Alumni Reunion, Ohio State University College of Medicine. Colonel Steger received his medical degree in 1934. He also holds both a Master's degree and a Doctor's degree in public health from Johns Hopkins University.

FILM—BURN MANAGEMENT

Lt. Col. Robert D. Pillsbury, MC, Commander of the Surgical Research Unit, Army Burn Center, Fort Sam Houston, Texas, with Capt. Jerome J. DeCosse, MC, and Sergeant First Class Judge R. Best, photographer, have reviewed the training film on the management of burns produced at that Center.

This film will be used to instruct professional personnel in the care of mass numbers of burned casualties, supportive care for burned persons, local care of burns, and skin grafting.

The Surgical Research Unit is credited with initiating a number of new concepts in the treatment of burn injuries.

CHINESE MEDICAL OFFICERS

The second group of non-English speaking Chinese medical officers will arrive at Brooke Army Medical Center in July to attend an advanced course for Medical Service Officers at the Army Medical Service School.

Approximately 25 high-ranking medical men are scheduled to come from Taiwan to study tactical, administrative, and professional duties of field grade officers who will or do hold command and staff positions in the Army of Nationalist China.

Interpreters who served the first group of non-English speaking students will remain at the school through the second session of the course. They are Lieutenant Colonel Chao Hwan-ting, Majors Teng Chen-yung and Wu David Tachin, Captain Ching Chung-hua, and First Lieutenants Chu Ping-cheng and Teng Kuo-kwang.

SIMMONS MEMORIAL LECTURE

Dr. Ernest L. Stebbins, Director of the School of Hygiene and Public Health, Johns Hopkins University, gave the third James Stevens Simmons Memorial Lecture at Walter Reed Army Medical Center, April 18.

Major General James P. Cooney, Army Deputy Surgeon General presided at the lecture in which Dr. Stebbins discussed "Preventive Medicine, a Broad Spectrum Speciality."

RETIRED

Maj. General Earle Standlee, MC, Former Surgeon of the Army Forces, Far East, and 8th Army, recently retired after more than 32 years service.

General Standlee is a native of Texas. He received his medical degree from Baylor Medical College in 1925 and was commissioned in the Army Medical Service on graduation. During World War I General Standlee was an enlisted man.

General and Mrs. Standlee will make their home at 706 Park Drive, Hillsboro, Texas.

UNIFORM

All officers and warrant officers of the Army must have the green uniform and at least one set of the blue uniform by October 1, except those who will be unable to get a full season's wear out of the uniform because of contemplated separation.

Beginning October 1, 1959 the entire Army will be in the green uniform.

Navy

Surgeon General—Rear Adm. Bartholomew W. Hogan
Deputy Surgeon General—Rear Admiral Bruce E. Bradley

NAVAL AVIATION MEDICAL CENTER

At Pensacola, Florida, the U. S. Naval Hospital, the U. S. Naval School of Aviation Medicine, and certain functions now carried on by the Medical Department of the Naval Air Station have been integrated to establish the Naval Aviation Center.

For the first time student naval flight surgeons will have clinical care of inpatients as a significant part of their graduate training. Unusual or problem cases among aviation personnel may now be hospitalized for study by the highly qualified specialists available in the combined commands many of whom are officially designated members of the Permanent Board of Medical Examiners.

The Commanding officer of the new Center is Captain Lester E. McDonald, MC, a veteran Naval flight surgeon and advisor. Directly under Captain McDonald is the Naval Hospital under command of Captain J. V. Land, MC, and the School of Aviation Medicine under command of Captain J. C. Early, MC.

The new Center is under the military command of Vice Admiral A. K. Doyle, USN, Chief of Naval Air Training and under the management and technical control of the Bureau of Medicine and Surgery.

CONSULTANTS BOARD MEMBERS

Two eminent physicians, Dr. William L. Rogers, a surgeon of San Francisco, Calif., and Dr. Gordon M. Bruce, an ophthalmologist of New York City, will serve on the Board of Reserve Consultants to the Bureau of Medicine and Surgery.

Other members of the Reserve Consultant Board and the medical specialties they represent are: Dr. Donald Anderson, Medical Education; Dr. Joseph Barr, Orthopedic Surgery; Dr. F. J. Braceland, Psychiatry and Neurology; Dr. Edwin N. Broyles, Otolaryngology; Dr. Lowell T. Coggeshall, Tropical Medicine; Dr. Winchell McK. Craig, Neurosurgery and Chairman of the Board; Dr. John G. Downing, Dermatology; Dr. Paul Greeley, Plastic Surgery; Dr. Donald Hale, Anesthesiology; Dr. Richard Kern, Cardiology; Dr. George Lyon, Pediatrics; Dr. Daniel F. Lynch, Oral Surgery; Dr. Alphonse McMahon, Internal Medicine; Dr. Wendell G. Scott, Radiology; Dr. Benjamin Tenny, Jr., Obstetrics and Gynecology; Dr. Shields Warren, Pathology; and Dr. M. G. Westmoreland, American Specialty Board Requirements.

HOSPITAL ADMINISTRATION AFFILIATION PROGRAM

Negotiations for the development of an affiliation program between the Naval School of Hospital Administration and the American University, Washington, D.C., will be completed before the 19th class in hospital administration at the National Naval Medical Center completes its course in September. This announcement was recently made by Cdr. Charles L. Crawford, MSC, Commanding Officer of the Naval School of Hospital Administration.

Under the arrangements it will be possible for student officers to earn up to 30 formal semester hours of credit during the regular course in hospital administration as now given at the Naval School of Hospital Administration.

APPOINTED COMPTROLLER

Mr. Thomas J. Hickey has been appointed Comptroller and Director of the Comptroller Division of the Bureau of Medicine and Surgery. He is a career employee with 23 years Civil Service and has served as the Deputy Comptroller since November 1946.

RETIRED

Rear Admiral Herman P. Riebe, Dental Corps, was placed on the retired list on April 1 after more than thirty years of active service.

He entered the Navy as an assistant dental surgeon with the rank of Lieutenant (junior grade) in 1926, and subsequently advanced to the rank of Rear Admiral in 1951. Upon his retirement he was Inspector General, Dental, Bureau of Medicine and Surgery, Department of Navy.

Admiral Riebe will make his permanent residence in San Francisco where he will be attached to the Staff of the College of Dentistry, University of California.

RETIRED

Cdr. E. R. Stovall, MSC, LCdr. James C. Lewis, MSC, LCdr. Raymond L. Posey, and LCdr. Lindley Williams were retired from the active naval service on May 1.

NEW DENTAL EQUIPMENT AND TECHNICS

Dentistry, as well as industry, has benefitted by newly developed materials, machines, and technics. In the last few years, the development of faster dental engines, frictionless handpieces and superior cutting tools (tungsten carbide burs and diamond abrasive instruments) has enabled the dentist to reduce operating time with less fatigue to himself and with greater comfort to the patient.

Patients, relieved of fear and pain, are more cooperative and this, together with faster cutting instruments, enables the dentist to do more work per appointment.

The Navy has embarked on a four year program to convert its dental operating units to high speed operation. New cutting instruments and water coolant apparatus have been made available in the Medical Stock List for operation at higher speeds.

Air Force

Surgeon General—MAJ. GEN. DAN C. OGLE
Deputy Surg. Gen.—MAJ. GEN. OLIN F. MCILNAY

SCHOOL OF AVIATION MEDICINE

Construction has begun on the $9,000,000 installation for the School of Aviation Medicine at Brooks Air Force Base, Randolph Air Force Base, Texas. The artist's conception of this center was shown in the September 1956 issue of THIS JOURNAL.

Ground-breaking ceremony was held on May 10.

The school hopes that it can move to the new facility by July 1959.

The original plan of the new installation called for a small hospital to demonstrate clinical procedures, and to provide beds for observation and treatment of patients with complex problems referred to the School for consultation. The clinical facility has been omitted from the present construction. Instead, the new 1,000-bed hospital at nearby Lackland Air Force Base will provide this support to the school. A closed-circuit television system, with a link to Lackland, will make it possible to show the treatment of patients by flight surgeons at the hospital to student officers in the School's own class rooms.

HONORED

For distinguished contributions to microbiological research and technology, Dr. Roland B. Mitchell of San Antonio has been elected a Fellow of the American Academy of Microbiology.

Dr. Mitchell is acting chief of the Medical Sciences Division at the Air Force School of Aviation Medicine. Since 1948, he has also headed the microbiology department of the institution at Randolph Air Force Base.

His studies of biological activity in the upper atmosphere have extended the frontiers of knowledge in this field, incidentally leading toward a better understanding of the possibility of life on other planets.

For his work in developing faster tests to identify harmful bacteria, and determine their susceptibility to various antibiotics, Dr. Mitchell won second honors in Armed Forces-wide competition several years ago for the Sir Henry Wellcome Award of the Association of Military Surgeons.

A native of Denton, Dr. Mitchell received his B.S. degree from North Texas State

College, and later a Ph.D. in bacteriology from the University of Texas. He served with the Air Corps in World War II, and now holds a Reserve commission.

For two years, before he joined the School of Aviation Medicine, Dr. Mitchell was professor of bacteriology at the University of Florida.

Public Health Service

Surgeon General—LEROY E. BURNEY, M.D.
Deputy Surg. Gen.—W. PALMER DEARING, M.D.

NATIONAL HEALTH SURVEY

On May 6 interviewers began visiting selected households throughout the nation in order to obtain information for the National Health Survey. They are asking questions about illness in the family, about accidents and injuries, disabilities, hospitalization, and medical and dental care.

Dr. Leroy E. Burney, Surgeon General of the Public Health Service, had this to say: "This Survey is a most important forward step in the health field. The information it will provide is overdue. For many years, physicians, research workers, insurance companies, hospital personnel, and others concerned with health have been in urgent need of facts on the health of the general population. This is the first time in 20 years that an effort has been made to collect these facts on a comprehensive basis."

NATIONAL LIBRARY OF MEDICINE

At long last a site for the National Library of Medicine has been chosen. The Board of Regents of the Library chose the grounds of the National Institutes of Health in Bethesda, Maryland, for the location of this old institution which was originally known as the Library of the Surgeon General of the Army, later as the Armed Forces Medical Library, and since October 1, 1956 as the National Library of Medicine.

Some may be unhappy about the selection of the site in Bethesda, Maryland, a suburb of Washington. There are those who would have placed the library in another city; some would have placed the location in the vicinity of the Smithsonian Institution in Washington. The selection of the grounds of the National Institutes of Health will permit adequate space for the building and for parking. There should be plenty of room for buildings in the future.

CHIEF MEDICAL OFFICER, COAST GUARD

Dr. Richard B. Holt, a senior career medical officer of the Public Health Service, has been appointed Chief Medical Officer of the United States Coast Guard effective July 1. In this position he will hold the rank of Assistant Surgeon General, comparable with that of Rear Admiral (upper half). He will succeed Dr. Joseph F. van Ackeren who is retiring after 31 years of service, the past five of which have been as Chief Medical Officer of the Coast Guard.

Dr. Holt is a native of Clarksville, Tenn. He received his medical degree from Vanderbilt University in 1927 and entered the Public Health Service as a medical intern. He has served in U. S. Consulates in Stuttgart, Stockholm, Oslo, London, and Dublin.

PRESIDENT-ELECT

Dr. Chapman H. Binford, Medical Director, USPHS, on duty at the Armed Forces Institute of Pathology, Washington, D.C., has been elected to the office of "President Elect" in the International Academy of Pathology. The Academy held its meeting in Washington this year.

AMERICAN INDIAN HEALTH PROBLEMS

American Indians today have health problems resembling in many respects those of the general population of the United States a generation ago. Diseases which are largely controlled among the general population still cause widespread illness and death among these Indians.

The high death rate is attributed to communicable diseases such as tuberculosis, pneumonia, enteric diseases, and accidents.

Among Indian children, the death rate is more than double the national average. Other problems are eye and ear diseases, dental diseases, and mental illness.

There is said to be a lack of health services but that is not alone the reason for the poor health conditions among the Indians. Substandard and overcrowded housing and lack of sanitary facilities are major factors. Water is often scarce and may be taken from contaminated sources. Indian reservations are typically in remote and sparsely settled areas. Then there is the low educational level of many Indians. More than half have family incomes of less than $1,000 a year.

The Indian population within the continental United States is estimated to be 472,000, of whom 335,000 live in areas served by the Indian health program. The population of the Indians has nearly doubled since 1890 and is expected to increase by another 50 percent by 1975.

SPECIAL LABORATORY COURSES

1957

Sept. 9-Oct. 4—Laboratory Methods in the Diagnosis of Parasitic Diseases. Part 1. Intestinal Parasites.

Oct. 7-25—Laboratory Methods in the Diagnosis of Parasitic Diseases. Part 2. Blood Parasites.

Oct. 14-25—Laboratory Methods in the Diagnosis of Viral and Rickettsial Diseases.

Oct. 28-Nov. 1—Laboratory Methods in the Diagnosis of Rabies.

1958

Jan. 6-24—Laboratory Methods in Medical Mycology Cutaneous, Subcutaneous and Systemic Fungi.

Jan. 20-31—Laboratory Methods in the Diagnosis of Tuberculosis.

Feb. 3-14—Laboratory Methods in the Study of Pulmonary Mycoses.

Feb. 10-21—Laboratory Methods in the Diagnosis of Bacterial Diseases. Part 1. General Bacteriology.

Feb. 24-28—Laboratory Diagnostic Methods in Veterinary Mycology.

Feb. 24-Mar. 7—Laboratory Methods in the Diagnosis of Bacterial Diseases. Part 2. General Bacteriology.

Mar. 10-21—Laboratory Methods in the Diagnosis of Bacterial Diseases, Enteric Bacteriology.

Mar. 10-21—Serologic Methods in the Diagnosis of Parasitic and Mycotic Infections.

Mar. 10-21—Laboratory Methods in the Diagnosis of Viral and Rickettsial Diseases.

Mr. 24-28—Laboratory Methods in the Diagnosis of Rabies.

*Laboratory Methods in the Diagnosis of Malaria.

*Special Training in Virus Techniques.

*Typing of Corynebacterium diphtheriae.

*Special Problems in Enteric Bacteriology.

*Phage Typing of Salmonella typhosa.

*Laboratory Methods in the Diagnosis of Leptospirosis.

*Serologic Differentiation of Streptococci.

*Bacteriophage Typing of Staphylococci.

Information and application blanks may be secured from the Laboratory Branch, Communicable Diseases Center, U. S. Public Health Service, P.O. Box 185, Chamblee, Ga.

* Course given by special arrangement only.

Veterans Administration

Chief Medical Director—WILLIAM S. MIDDLETON, M.D.

Deputy Chief Med. Dir.—R. A. WOLFORD, M.D.

ASSIGNMENTS

Dr. Thomas P. Crane, manager of the Veterans Administration hospital at Dearborn, Michigan became manager of the VA hospital at San Francisco, Calif., on May 5. He succeeded Dr. James G. Donnelly who retired recently.

Dr. Earl P. Brannon was transferred to the Veterans Administration hospital at Coatesville, Pa., as manager to fill the vacancy created by the resignation of Dr. Henry Luidens.

Dr. Lee G. Sewall has been appointed manager of the VA hospital at Perry Point, Md.

Dr. Edward R. Bennett, who has been director of the professional services at the Veterans Administration center in Biloxi, Miss., has been appointed as manager of the Leech Farm Road Veterans Administration Hospital, Pittsburgh, Pa.

Dr. Chalmer Davee has been appointed manager of the VA hospital in Marion, Ill. During World War II he served in the Navy Medical Corps, attaining the rank of commander. He succeeds Dr. Edward A. Welch who retired April 30.

LEAVES VA

Dr. Stewart T. Ginsberg, Chief of the Psychiatry Division, Veterans Administration, left that agency on May 1 to become Commissioner of Mental Health for the State of Indiana.

Dr. Ginsberg who has been a member of the staff of Georgetown University Medical School, Washington, D.C., will in addition to his position as Commissioner of Mental Health hold an appointment as professor of psychiatry at the Indiana University School of Medicine in Indianapolis.

HYPERTENSIN

The quest for a substance to counteract hypertensin, a recently discovered chemical (1951) in the cases of hypertension is the next step in combating that disease.

Dr. Joseph R. Kahn and Leonard T. Skaggs, Ph.D., at the Veterans Administration Hospital in Cleveland, have recently shown that there is a hypertensin I and a hypertensin II; the former is relatively harmless, the latter has great vasoconstrictive properties. So potent is hypertensin II that 0.05 gm. will raise to alarming heights the blood pressure in 166,000 persons. It is interesting to note that in order to get 0.05 gm. of hypertensin II it takes 1375 liters of horse serum (3 tons of whole blood).

Now hypertensin II has been broken down into its amino acid constituents. Will the next step—finding something to counteract hypertensin II—be far away or near? Considering the fact that Dr. Kahn has worked on this problem 28 years we know one thing—it takes patience.

CANCER CELL DEATH EXPOSED

At the Veterans Administration Hospital, McKinney, Texas, Dr. Walter H. Buckholts and his staff are installing special time-lapse cameras and microscopes to study cancer cell death following the use of radiation with radium, x-rays, and cobalt.

The staff is being assisted in this work by Dr. C. M. Pomerat of the University of Texas Medical School at Galveston, who is a pioneer in the use of time-lapse cameras for tissue study.

Miscellaneous

ANTIBIOTIC SYMPOSIUM

The Fifth Annual Symposium on Antibiotics will be held at the Willard Hotel, Washington, D.C., October 2-4, 1957. Manuscripts should be submitted to Dr. Henry Welch, Director of Antibiotics Division, Food and Drug Administration, Department of Health, Education, and Welfare, Washington, D.C.

COURSE IN GASTROENTEROLOGY

The Annual Course in Postgraduate Gastroenterology will be given at The Somerset in Boston, Mass., on October 24, 25, and 26. The course will be under the direction and co-chairmanship of Dr. Owen H. Wangensteen, Professor of Surgery of the University of Minnesota Medical School, and Dr. I. Snapper, Director of Medical Education, Beth-El Hospital, Brooklyn, N.Y.

For further information write to the American College of Gastroenterology, 33 W. 60th Street, New York 23, N.Y.

MEDICO-LEGAL FILM

"The Doctor Defendant," the second film in the A.M.A.-American Bar Association series on *Medicine and the Law* will be available July 1 from the Film Library,

American Medical Association, 535 N. Dearborn St., Chicago 10, Ill.

This film is a companion film to "The Medical Witness" recently produced by The William S. Merrell Company, Cincinnati, Ohio. Both films are 30-minute black and white sound productions.

USS *Forrestal*

The luxury liners *United States* and *America* could be placed side by side on the flight deck of the Navy's aircraft carrier *Forrestal.—Science News Letter.*

LOSSES AT SEA

The Hazards to Men in Ships Lost at Sea, 1940-44, is a Medical Research Council (England) Special Report (No. 291) recently released.

This study is of special interest to medical officers of all the military services, covering as it does, the various aspects of survival of men from ships or aircraft adrift in open boats or on life rafts. Some of the experiences related by the authors make Bligh's famous voyage in a boat from the *Bounty* seem like a cruise in a luxury yacht.

More than 27,000 persons and 448 sinkings of ships were studied. About two-thirds of the men were rescued, 26% were lost in abandoning ship, and 6% died after reaching lifecraft. Length of voyage, exposure to cold and submersion were the principal factors in the mortality rate. The drinking of sea water increased the death rate ten times. Among important conclusions were: that more frequent and realistic drills in abandoning ship, better means of loading and lowering boats, and better protection against cold and wet would have saved many lives. Improved provision for fresh water and emergency rations and "better conspicuity and signalling devices" would have shortened a number of lifecraft voyages and materially reduced the loss of life.

EDUCATION

Education today has before it many new jobs, but perhaps the greatest of these is the job of educating the human spirits to live happily in the new world created by science. For while science has been able to make an easier world, it cannot by itself make a happier world.—Luella B. Cook, "Man's Reach Should Exceed His Grasp," *English Journal.*

THE PENTAGON

The Pentagon contains 3,696,347 square feet of utilizable space and houses over 30,000 persons. Fifty-nine percent (2,188,565 square feet) of the total space is used for offices. 245,321 square feet is occupied by cafeterias, dining rooms and concessions. The remainder is used for maintenance shops, garages, files, and storage. But the building is not big enough to house all the military establishment offices in Washington!

MOTOR VECHICLES

The tremendous increase in the number of motor vehicles in the United States and in their use was emphasized by Commissioner C. D. Curtiss, of the U. S. Bureau of Public Roads, in a recent address in Boston. He gave the following motor vehicle registration figures:

1916	3.6 million
1921	10.5 million
1940	32.5 million
1950	49.2 million
1955	62.8 million
1956	65+ million

Mr. Curtiss estimated that by 1965 there would be in excess of 80 million cars, trucks, and buses, and by 1975 more than 90 million motor vehicles. He pointed out that in 1940 U. S. motorists traveled 302 billion vehicle miles; in 1955, a total of 603 billion miles. The estimate for 1965 is 814 billion.

"To bring the astronomical figure for 1955 traffic down to something more understandable," Mr. Curtiss said, "it is the equivalent of 274,000 round trips daily between New York and San Francisco."—*Bulletin, Amer. Assoc. of Motor Vehicle Administrators.*

Honor Roll

Since the publication of our last list, the following sponsored one or more applicants for membership in the Association:

Capt. H. J. Alvis, (MC), USN
Major James E. Chapman, MC, USAR
Capt. Joe B. Gipson, MSC, USA
Col. Augustus A. Hall, MC, USA
Col. James Kidder, MC, USA
Col. Amos R. Koontz, MC, Md. NG
Capt. Canio F. Palladino, MSC, USAF
Lt. Col. Joseph Raider, AUS, Ret.
Col. Arthur J. Redland, MC, USA
Philip Reichart, M.D., F.A.C.P.
Major Gen. Paul I. Robinson, MC, USA

PROPOSED CHANGE TO BY-LAWS OF THE ASSOCIATION

The Executive Council of the Association of Military Surgeons proposes a change in the By-Laws of the Association. This change will be voted on at the Business Meeting of the Association to be held during the 64th Annual Convention, Hotel Statler, Washington, D.C., October 28-30, 1957.

Paragraph 5, Article VI, Section 3.

Present reading: "The accounts of the Secretary shall be audited by *an officer of the Finance Department of the Army or of the Bureau of Supplies and Accounts of the Navy, or* a certified public accountant as soon as possible after the end of the fiscal year *(September 30)* and at such other times as the Executive Council may require."

Proposed reading: The accounts of the Secretary shall be audited by a certified public accountant as soon as possible after the end of the fiscal year (June 30) or at such other times as the Executive Council may require.

Discussion: The services of a certified public accountant have been used for some years. It is questionable whether the military services would provide the necessary personnel to audit the funds of the Association. The change of the fiscal year from September 30 to June 30 is advisable from an administrative standpoint since the September date does not allow sufficient time for an audit and the preparation of a report by the Secretary prior to the annual convention which is held in October or November.

INFORMATION FOR AUTHORS

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REPRINTS: must be ordered when galley proof is returned by the author to the editor.

ADDRESS: Send manuscripts to the Editor, MILITARY MEDICINE, Suite 718, 1726 Eye Street, N.W., Washington 6, D.C.

OBITUARIES

Med. Dir. John F. Mahoney, U.S.P.H.S., Ret.

John Friend Mahoney, Medical Director, U. S. Public Health Service, Retired, died in the U. S. Public Health Service Hospital, Staten Island, New York on February 23 at the age of 67.

A native of Wisconsin he graduated in 1914 from Marquette University. In 1917 he entered the United States Public Health Service and was retired in 1949. At that time he became health commissioner of New York City. At the time of his death he was Director, Bureau of Laboratories, New York City.

Dr. Mahoney developed the penicillin treatment for syphilis. In 1946 he received the Lasker Award of the American Public Health Association for his work in venereal disease.

In 1935 he was granted Life Membership in the Association of Military Surgeons and Honorable Mention in the Sir Henry Wellcome Prize Essay Contest.

Dr. Mahoney served as chairman of the committee of experts on venereal disease of the World Health Organization, also as chairman of the National Advisory Serology Council. He was author of many papers published in professional journals. He resided at: 32 Valley St., Arrochar Staten Island, New York.

Rear Adm. Arthur J. White, U. S. Navy, Ret.

Arthur Jay White, Rear Admiral, U. S. Navy Medical Corps, Retired, died at the U. S. Naval Hospital, Annapolis, Maryland, March 26, at the age of 67.

Admiral White was a native of Ohio and was graduated from Adelbert College with an A.B. degree in 1915. He received his medical degree from Western Reserve Medical School in 1917, and was appointed an Assistant Surgeon in the Medical Corps of the Navy following graduation. During World War II he was Senior Medical Officer of the *USS Lexington* and was awarded the Navy Cross for his service in action against Japanese forces in the Coral Sea May 7 and 8, 1942. He also received the Purple Heart for wounds received in the same action.

In January 1947 he was retired for reasons of physical disability, was recalled to active duty in August 1948, and was released from active duty on February 28, 1950.

Admiral White is survived by his wife, Mrs. Eleanor M. White, of 2000 Crestview Road, Baltimore, Maryland. Interment was at Arlington National Cemetery.

BOOK REVIEWS

LECTURES ON THE SCIENTIFIC BASIS OF MEDICINE. Vol. IV (1954-55). British Postgraduate Medical Federation University of London. 397 pages, 36 plates. John de Graff, Inc., New York. 1956. Price $6.50.

For the past four years the British Postgraduate Medical Federation has sponsored an annual series of lectures upon the scientific basis of medicine. In accordance with the practice of the previous three years, twenty-one of these lectures were selected for publication, and these comprise the contents of this text. The lectures were delivered during the latter part of 1954 and the early months of 1955.

The subjects cover biophysical, biochemical, histochemical and microbiologic fundamentals which either have current application to problems in clinical medicine, or have promise of having such in the near future. Advances in fundamental biologic sciences covered in lectures of three previous series, have already found practical application at the bed-side, and the scientific facts brought out in these discussions should prove of value in the clinical medicine of tomorrow.

This volume will have its greatest appeal to those physicians interested in the correlation of the biological sciences to clinical medicine. They will find their British colleagues to be extremely capable in their chosen fields, as well as excellent writers who know how to present a complex subject from start to finish in a readily understandable manner.

This reviewer regrets that there is such a lag between the presentation of these lectures and their printed appearance in these volumes.

CAPT. JULIAN LOVE, MC, USN, RET.

THE LABYRINTH—THE PHYSIOLOGY AND FUNCTIONAL TESTS. By Joseph J. Fischer, M.D., Clinical Professor of Otolaryngology, School of Medicine, Tufts University. 206 pages, Grune & Stratton, New York and London. 1956. Price $6.00.

This book is impressive because of the very complete review of the literature on the physiology and the clinical tests of the labyrinth.

For the student, it emphasizes the great amount of research to be done on this subject, since there is considerable controversy regarding even the simplest labyrinthine reactions.

For the neurologist, it stresses his relationship to the otologist. There is a correlation drawn between the functional tests for equilibrium as performed by the neurologist, and the labyrinthine tests as performed by the otologist.

Dr. Fischer's comments on vertigo from various causes is an interesting chapter. His comments on the toxicity of dihydrostreptomycin to the cochlea should be noted by any who contemplate using this drug. His conclusion on Meniere's disease as being "vertigo of unknown etiology and an over-used term" should be heeded by internists, generalists and otologists.

This book is worthy of a place on the book shelf of the student, interested in neurologic research, the internist, the otologist, and the neurologist.

ROBERT M. DEARMIN, M.D.

SURGERY OF THE HAND. 3d Ed. Sterling Bunnell, M.D., Consultant to the Surgeons General of the Army and Navy. 1079 pages, 1047 illustrations, 9 color plates. J. B. Lippincott Company, Philadelphia and Montreal. 1956. Price $22.50.

This volume is the third edition of Dr. Sterling Bunnell's classic, "Surgery of the Hand." The first edition was published in 1944 and a second edition in 1948. This third edition has been expanded by approximately 150 pages over the second edition, making a total of 1079 pages in all.

The organization of this volume differs little from the previous editions. Dr. Bunnell outlines in his clear and concise style the methods for handling all problems which one will meet in the treatment of the injured hand. It is unlikely that any other one individual will ever in his lifetime see, and work with, as large a volume of hand problems as has Dr. Sterling Bunnell. As Civilian Consultant for Hand Surgery to the Secretary of War during World War II, Dr. Bunnell had the unusual opportunity of directing the work of nine Hand Centers. This new edition contains photographs, x-rays and case descriptions of many of the patients seen in these Hand Centers.

In reviewing the third edition it is necessary to compare it to the second edition and to point out the superiority of this volume. Many of the chapters have been expanded and new sections have been added to bring the book up to date. There have been 277 new illustrations added. Dr. Bunnell describes his own new ideas with reference to various problems, among these being reconstructive surgery for the hand deformed by rheumatism; ischemic

contracture, local, in the hand; and many others. In addition, the author describes the techniques and methods of treatment which have been advanced by others and gives his opinion as to their merit. The section on infections has been enlarged by an excellent review of antibiotics in the treatment of hand infections. Cross-finger pedicle flaps are discussed. The section on thumb reconstruction has been expanded both by case presentation and description of techniques. There are several new tendon and muscle transfers which have been suggested since 1948 for use in the upper extremity and these are covered in detail. There is a thorough discussion of nerve grafting and its relative merits which includes Dr. Bunnell's personal cases, as well as the results reported by others. The section on pedicle flap technique is one of the finest that one will find in any text.

The volume is thoroughly indexed. However, one might wish for even more indexing in such a volume as this, for there is hardly a paragraph on each page which does not present a point of approach to the management of some problem.

This is a monumental piece of work and all of us who are surgeons will forever be indebted to this great man for the tremendous amount of time and energy which have gone into the producing of such a masterpiece. A volume such as this third edition compliments the great surgical skill which has made it possible for Dr. Bunnell to elevate this type of surgery to such a high standard of perfection.

The third edition is a volume which will be needed by all surgeons who deal in any way with the injured hand.

RAYMOND M. CURTIS, M.D.

PEDIATRICS. 36 Contributing Authors. Edited by Donald Paterson, M.D., Formerly Clinical Professor, Dep't. of Pediatrics, The University of British Columbia; and John F. McCreary, M.D., Professor and Head, Dep't. of Pediatrics, The Univerisity of British Columbia. 654 pages, illustrated. J. B. Lippincott Company, Philadelphia and Montreal. 1956. Price $14.00.

This new text states its purpose is "to fit between the excellent volumes which serve as consultant texts for the pediatricians and the well prepared small books of a more tabular style which have become available in recent years." In view of this particular purpose, the book has much to recommend it. Attention is primarily focused on the problems most commonly encountered in pediatric practice. Although most chapters and sections of the book are comparatively short, the material presented is concisely and clearly written. The bibliography is designed to provide the reader with review articles which cover various aspects of the subject in more detail.

A great deal of emphasis has been laid on the problems of the newborn, and the approach to this is novel and commendable. Several of the major problems concerning the newborn including respiratory distress, vomiting, infections, and intracranial disease, are discussed in detail as regards the various etiologies. A helpful illustration is the one entitled "the fetal life line" which illustrates the nutritional channels to the fetus in diagrammatic fashion. Despite the emphasis on the newborn there is too little space devoted to the problems of prematurity. The differential diagnosis of vomiting and the treatment of diarrhea are presented in detail, but it is rather surprising to note that paregoric is recommended in the treatment of diarrhea, a practice which has been shown to be without value in previous Canadian studies. The section relating to eye problems in childhood is particularly to be recommended. Other commendable features which are not usually available in pediatric texts is the chapter concerning "Accidents, Burns, Poisoning, and Sudden Deaths," the table depicting the etiology of jaundice in early infancy, and the up-to-date outline of hemorrhagic diseases.

This book discusses some of the more recent pediatric concepts including placental insufficiency or post-maturity, the syndrome of neonatal myasthenia gravis, and congenital purpura. Despite its purposeful limited scope, it is surprising to find no mention of histoplasmosis, coccidioidomycosis, and idiopathic pericarditis among other not uncommon diseases of childhood.

There seems to be no significant differences between pediatrics as it is taught and practiced in Canada and in the United States. The book has an excellent format and printing. This reviewer feels that the editors have carried out a difficult task in a satisfactory fashion. The book can be recommended to the general practitioner and is of value to the medical student.

HARRIS D. RILEY, JR., M.D.

MEDICAL EFFECTS OF THE ATOMIC BOMB IN JAPAN. National Nuclear Energy Series. Div. VIII-Vol. 8. Edited by Ashley W. Oughterson, M.D., and Shields Warren, M.D., Clinical Professor of Surgery, Yale University School of Medicine. Pathologist, Professor of Pathology, Harvard Medical School. 477 pages. Illustrated. McGraw-Hill Book Company, Inc., New York, Toronto, London. 1956. Price $8.00.

This detailed summary is based on the six volume report of the "Joint Commission for the Investigation of the Atomic Bomb in Japan." An attempt is made to analyze the numbers and types of casualties from the available data, the so called "ring" analysis being used.

The chapter on clinical observations is thorough,

complete, and informative showing the radiation sickness syndrome in all its phases and the variations in the clinical picture as a function of dose. The chapters on hematology and pathology are quite extensive and definitely worthwhile.

Throughout the text are many excellent photographs which are quite exemplary and the tables and graphs are numerous enough to give adequate statistical clarification.

Several interesting appendices give data on organization and personnel involved in the surveys as well as methods used in the studies. There are ample references for each chapter.

The work is very readable, is printed on fine paper and is well bound. This is a very valuable reference work for those who desire to consider the problem of mass casualties.

COL. CLINTON S. MAUPIN, MC, USA

OPERATIVE SURGERY. Vol. I (of 8 vol. set). Surgery of Trauma—Abdomen. Under the General Editorship of Charles Rob, M.C., M.Chir., F.R.C.S., Professor of Surgery, St. Mary's Hospital, London; and Rodney Smith, M.S., F.R.C.S., Surgeon, St. George's Hospital, London. 358 pages, illustrated. F. A. Davis Company, Philadelphia. 1956. Price $19.50 per vol.

This review deals with Volume I only. It consists of three parts: Part I—Introductory (98 pp.); Part II—Surgery of Trauma (109 pp.); and Part III—Abdomen (135 pp.). Each part is paged separately. This obviates the use of large numbers as page designations but I believe makes it slightly more difficult to look up references from the index.

This is an entirely new kind of textbook of surgery. The emphasis is placed on pictures and not on the text. The authors feel that if the best way to learn operative surgery is to *watch* an operation perfectly performed, then the emphasis in a book on operative surgery must clearly be *visual.*

Instead of describing an operation with a lot of words and illustrating it with a few pictures, the operation is described by pictures stage by stage, the text accompanying each picture is short, and is only for the purpose of clarification and to indicate difficulties or hazards in the various steps of the operation. This reviewer feels that possibly some of the descriptions are too brief, but certainly that is not so great a fault as to have them too verbose. Besides, the drawings are excellent and adequate.

This is the kind of book which will come in handy to any surgeon who wishes to refresh his memory on the details of any operation which he does not perform too frequently. It should also be of material help to young house surgeons.

The work also contains some general advice about indications, contraindications, preoperative and postoperative treatment, and complications. These are briefly included in the description of each operation.

Not only the standard operations for each of the various procedures are clearly set forth pictorially, but the common important variations of the various procedures are also adequately portrayed.

Part I (Introductory) deals with ligatures and suture materials, local anesthesia, block anesthesia, posture, hemostasis, infusions and transfusions, diathermy, needle biopsy, retractors, methods of dissection, drainage, technique of suturing and of tying knots, radium needle insertion, and wound dehiscence. All of these procedures are amply illustrated.

Part II (Surgery of Trauma) deals with the general treatment of wounds; fractures and joint injuries; abdominal injuries; injuries to the kidney, ureter, bladder and urethra; chest injuries; and wounds of the face and jaws.

Part III (Abdomen) deals with acute abdominal conditions; gastroscopy; pyloromyotomy in infants; gastrostomy; perforated peptic ulcer; pyloroplasty; duodeno-jejunostomy; gastro-jejunostomy and antral-exclusion; partial gastrectomy operations for bleeding peptic ulcer, gastro-jejunal ulcer and gastro-jejuno-colic fistula; gastrectomy for cancer; and vagotomy. Part III will be continued in the second volume.

This reviewer was delighted to see that the importance of the submucous coat in intestinal anastomosis is stressed in the chapter on "Specimen Anastomosis of Hollow Viscera" by Sir Heneage Ogilvie. He states that "'Til lately the peritoneal coat was considered of extreme important in intestinal anastomosis." Unfortunately it is still so considered by some surgeons. That the submucous coat is the important coat in intestinal anastomosis was pointed out by Halsted in 1887 (Mm. J. M. Sc., *94,* 436), and yet it is amazing how this has escaped the notice of many competent surgeons. Sir Heneage stresses the importance of the submucous coat and states that "loops of uncovered bowel will unite just as well as loops of peritonealized bowel provided they are equally well sutured and not under tension."

If the forthcoming volumes live up to the forecast of the first volume, this work will be a *must* for every well rounded surgical library.

AMOS R. KOONTZ, M.D.

OPERATIVE SURGERY. Vol. II. (Set to include 8 vols.)—Abdomen.

The present review deals with Volume II only. This volume is a continuation of Surgery of the Abdomen, which was started in Volume I, and continues with the Surgery of Hernia (all types); the Appendix, Mesentery and Peritoneum; the Spleen (including operations for Portal Hypertension); the Pancreas; the Biliary System and Liver; the

Small Intestine; and the Large Bowel (exclusive of Rectum and Anus).

I stated in the review of the first volume that the emphasis in this work is placed on the pictures and not on the text, as the authors feel that the best way to learn operative surgery is to *watch* an operation perfectly performed instead of reading about it.

The illustrations in the first volume were almost uniformly excellent and this continues in the second volume, except for those dealing with hiatus hernia. The latter are not very clear.

In dealing with inguinal hernia, the authors speak of the "relaxation operation of Reinhoff and Tanner." This reviewer would like to point out again, as he has many times before, that the relaxation incision in the sheath of the rectus muscle, which is so useful in inguinal hernia repair, was first used by Halsted in 1903 (Johns Hopkins Hosp. Bull. *14*, pp. 211-212). I believe that the reason that Halsted's relaxation incision has been missed by so many surgeons is due to the fact that he had only one paragraph on it in a long article dealing with inguinal hernia in general, and there was nothing in the title to suggest that the article might include a description of this important procedure. This relaxation incision was also described by Fallis in 1938, Reinhoff in 1940, and Tanner in 1942. It should be made clear, however, that priority belongs to Halsted.

Sliding hernia is so important, and so many cases are so difficult to handle, that I was frankly amazed at the brief and inadequate handling of this subject in this fine textbook of surgery. There is no mention of methods of handling huge scrotal sliding hernias, of which one encounters not a few, and there is no mention of the LaRoque intra-abdominal approach, which is so useful, not only in handling sliding hernias, but especially in recurrent hernias which have been operated on a great many times and in which the anatomy is frequently so scrambled that the approach is difficult from the inguinal region alone.

"Thread or catgut" is recommended as the suture material in inguinal hernia repair. I strongly feel that it is high time we were getting away from catgut in hernia repair. It is well known that it takes ten to fourteen days to get sufficient healing in any wound to provide adequate tensile strength. It is also well known that catgut is entirely unreliable and cannot be depended upon to last routinely more than a few days. It seems futile, then, to use catgut as a suture material to hold important structures in apposition, the firm healing of which are necessary for the cure of the hernia. It has also been demonstrated that the recurrence rate is from three to four times as high when catgut is used as when non-absorbable sutures are used.

The methods described for surgery of the large bowel are slightly antiquated and should be brought up to date. One gets the impression that the authors use the Milkulicz type of colostomy far more often than is the common vogue today.

On the whole, though, this volume continues the fine promise of the first volume and would be a valuable addition to any surgical library.

AMOS R. KOONTZ, M.D.

ROSENAU PREVENTIVE MEDICINE AND PUBLIC HEALTH. 8th Ed. By Kenneth F. Maxcy, M.D., Dr. P. H., Professor Emeritus of Epidemiology, The Johns Hopkins University, with 27 contributors. 1465 pages. Appleton-Century-Crofts, Inc., New York. 1956. $15.00.

This eighth edition of Rosenau's classic textbook is the second revision by Dr. Maxcy. This new edition has been retitled to include "public health" in lieu of "hygiene." This was done to indicate more adequately the full scope and purpose of the book. The author and the 27 contributors have rewritten, either completely or in part, 44% of the text to bring the material up to date. Selected references have been added to document the newer work and a more detailed and comprehensive index has been provided.

The material on tuberculosis, poliomyelitis and ionizing radiation have been revised to keep abreast of the important advances in these fields over the past five years. New subjects added include Coxsackie virus infection, West Nile encephalitis and epidemic nephritis. Chapter 47, "National Health Services in the United States," has been revised to describe the organization and functions of the Department of Health, Education and Welfare which came into being in 1953.

This book continues to be the outstanding basic text and reference in the field. Not only is it considered to be indispensible to the general practitioner and those working primarially in preventive medicine and public health, but it is an invaluable authoritative reference that should be readily available to all military physicians.

COL. CLARK B. WILLIAMS, MC, USA

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Books may be ordered through the Association

Experimental Psychopathology, edited by Paul H. Hoch, M.D. and Joseph Zubin, Ph.D. Grune & Stratton, Inc., New York, N.Y. Price $6.50.

Management of Abdominal Operations, 2nd ed. 2 vols., by Rodney Maingot. The Macmillan Co., New York, N.Y. Price $32.00.

Principles and Practice of Surgery, edited by J. Garrott Allen, M.D. Henry N. Harkins, M.D., Carl A. Moyer, M.D. and Jonathan E. Rhoads, M.D. J. B. Lippincott Co., Philadelphia, Pa. Price $16.00.

Synopsis of Gastroenterology, by Rudolf Schindler, M.D., F.A.C.P. Grune & Stratton, Inc., New York, N.Y. Price $7.75.

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1957 Medical Progress, edited by Morris Fishbein, M.D. McGraw-Hill Book Co., Inc., New York, N.Y. Price $5.00.

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Medical Manual of Chemical Warfare, A Symposium. Chemical Publishing Co., New York, N.Y. Price $4.00.

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Therapeutic Exercise for Body Alignment and Function, by Marian Williams, Ph.D. and Catherine Worthingham, Ph.D. W. B. Saunders Co. Philadelphia, Pa. Price $3.50.

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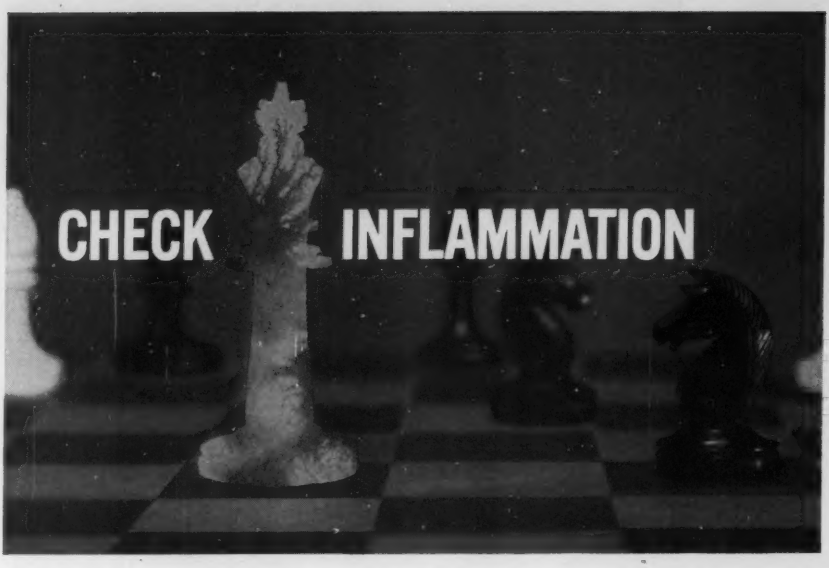

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1. Miller, J. M.; Surmonte, J. A.; Ginsberg, M., and Ablondi, F. B.: Postgraduate Medicine 20:260 (Sept.) 1956.

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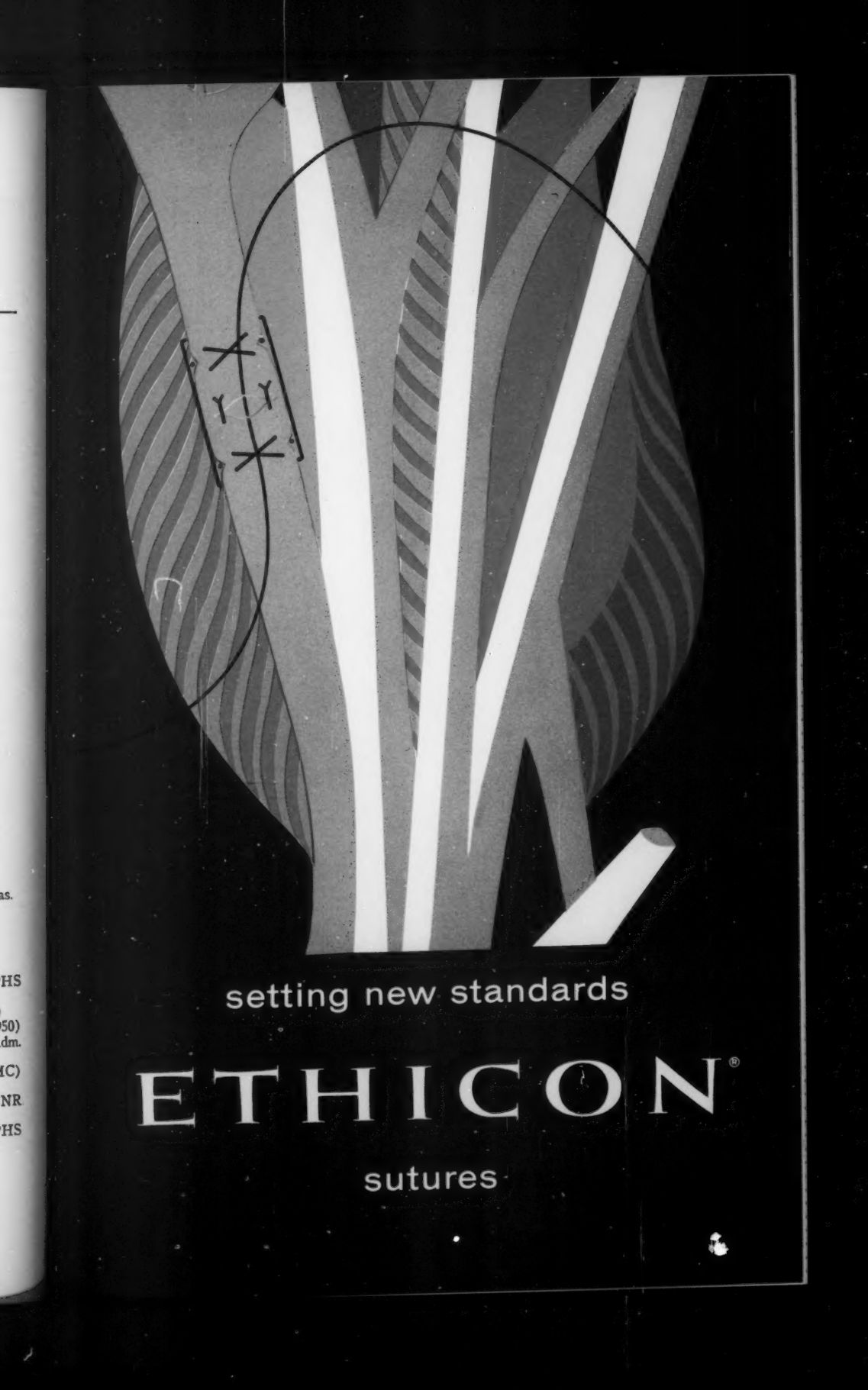
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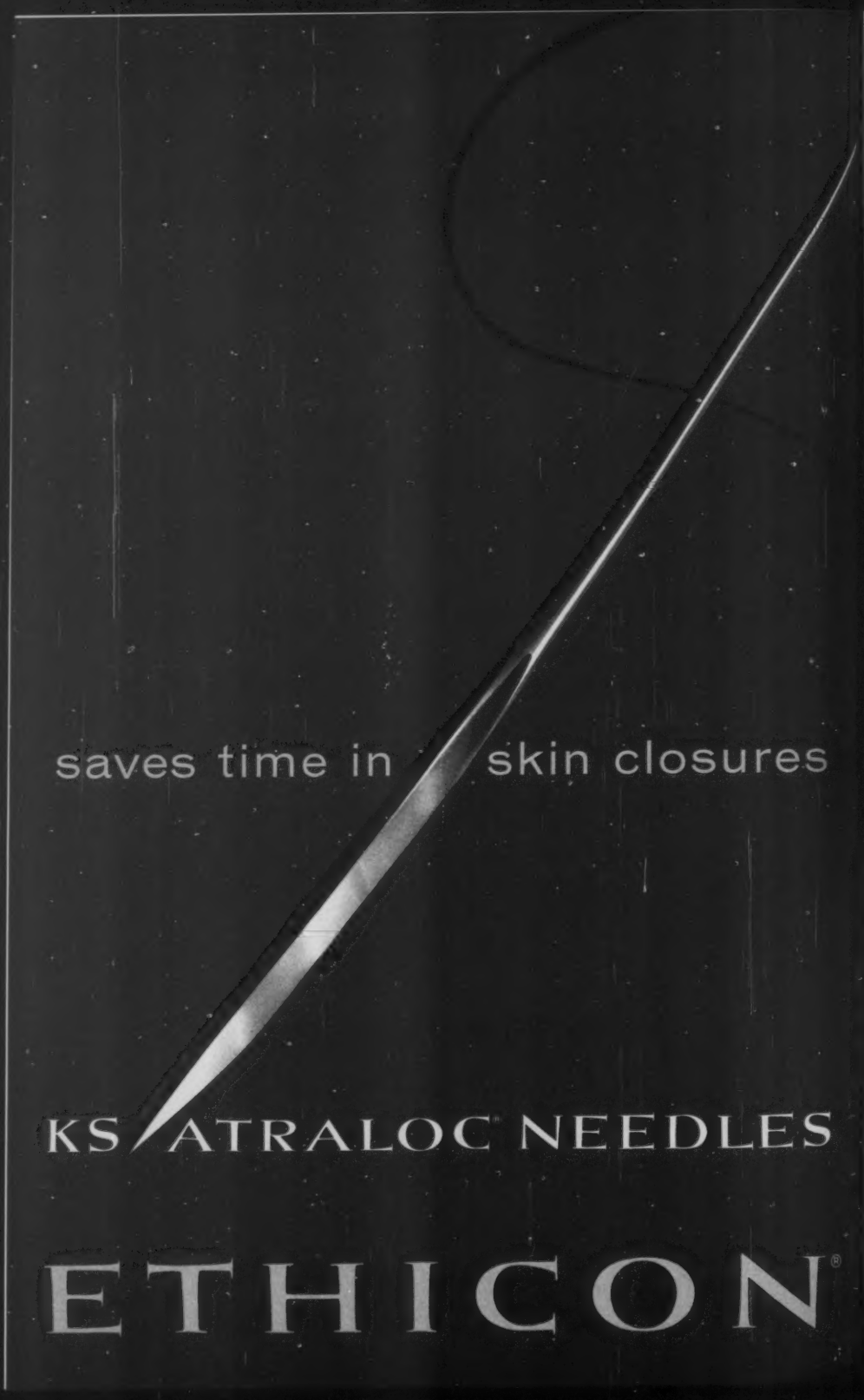
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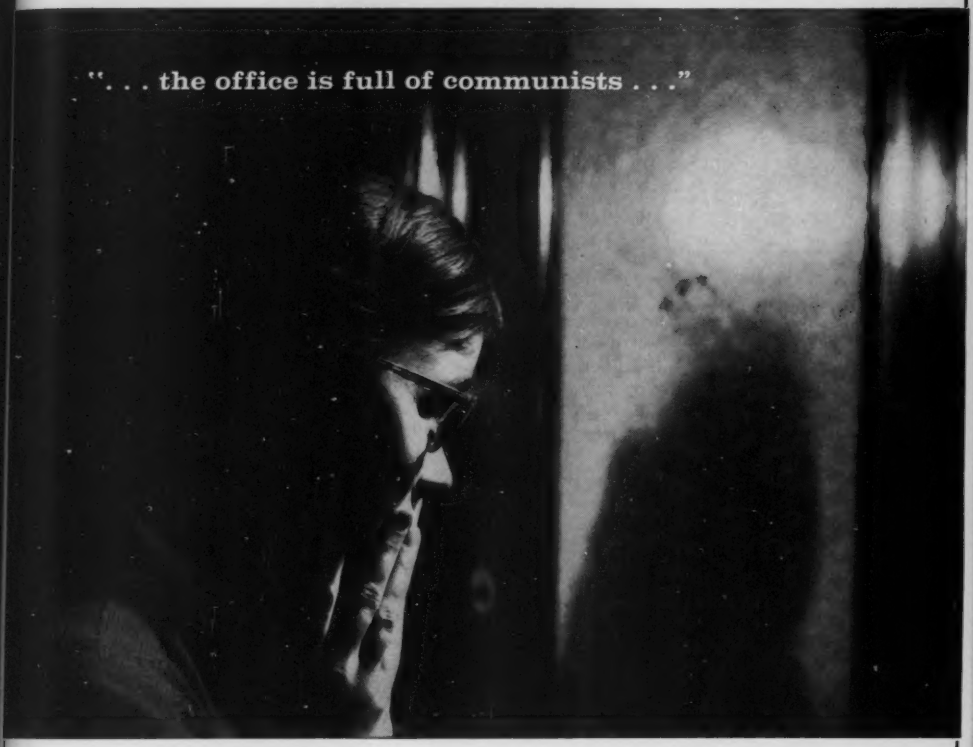

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patient: 29-year-old single female. Severe anxiety of two months' duration. Complained to police of car following her home nightly. Afraid to quit job because of fear of reprisal by communists in her office.

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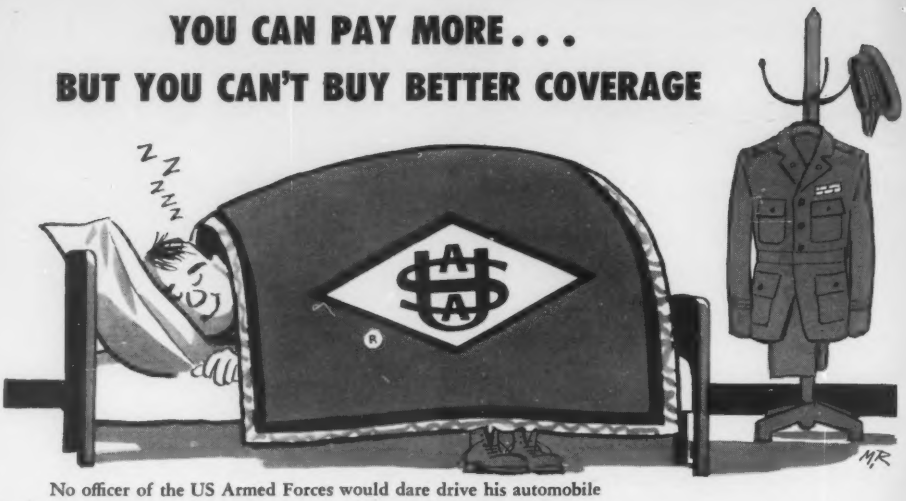

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Factory Price	Cost	Purchase Date	New/Used	Current Car License		Name in which car legally registered
				Year	State	

Is the automobile customarily used in the occupational duties of any person except in going to and from the principal place of occupation?_____

Is the automobile customarily used in driving to or from work?_____

If the automobile is customarily used in driving to or from work, how many road miles is the car driven one way?_____

Are any of the operators under 25 owners or principal operators of the automobile?_____

How many operators under age 25?_____ Age of each:_____

Relationship to owner:_____

If any of the operators under 25 are owners, or principal operators, of the automobile,

(a) are all such operators married?_____

(b) do all such operators have legal custody of a child resident in the household?_____

Name_____ Rank_____ Serial No._____

Military Address_____

If car not at above address, give location of car_____

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References: 1. Bernstine, J. B., and Rakoff, A. E.: Vaginal Infections, Infestations and Discharges, New York, The Blakiston Company, Inc., 1953, p. 235. 2. Overstreet, E. W.: Arizona M. 10:383, 1953. 3. Schwartz, J.: Obst. Gyn., N.Y. 7:312, 1956. 4. Crossen, R. J.: Diseases of Women, St. Louis, The C. V. Mosby Company, 1953, p. 292.

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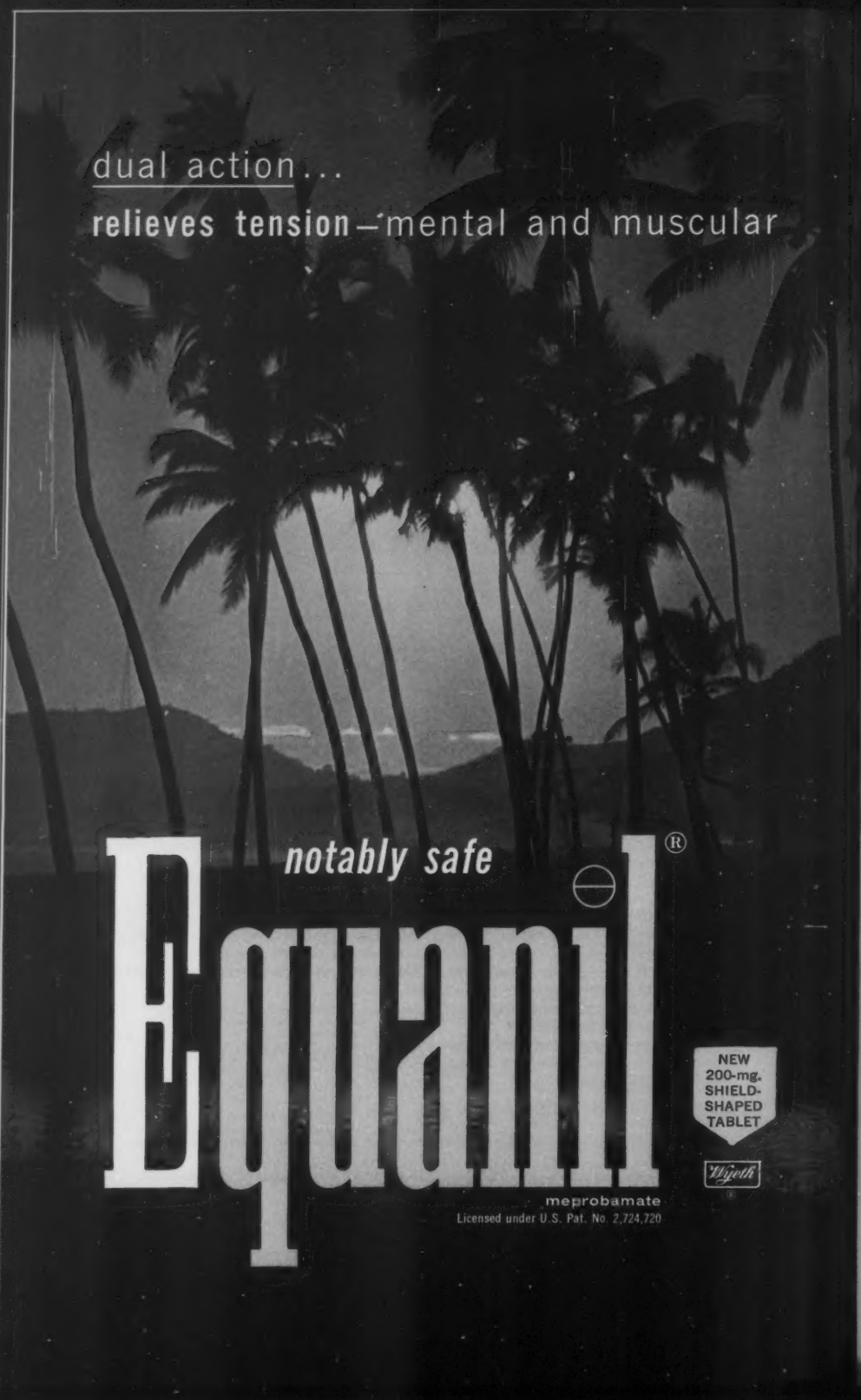
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Dosage: Patients responsive to Orinase may begin therapy as follows:

First day
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Third day
1 Gm.

Usual maintenance dose 1 Gm.
(must be adjusted to patient's response)

To change from insulin to Orinase:

If previous insulin dosage was
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40 u./day . . . reduce insulin 30% to 50% immediately; gradually reduce insulin dose if response to Orinase is observed.

more than
40 u./day . . . reduce insulin 20% immediately; carefully reduce insulin beyond this point if response to Orinase is observed. In these patients, hospitalization should be considered during the transition period.

Caution: During the initial "test" period (not more than 5 to 7 days), the patient should test his urine for sugar and ketone bodies three times daily and report to his physician daily. For the first month, he should report at least once weekly for physical examination, blood sugar determination, and white cell count (with differential count, if indicated). After the first month, the patient should be seen at least once a month, and the above studies carried out.

It is especially important that the patient, because of the simplicity and ease of administration of Orinase, does not develop a careless attitude ("cheating" on his diet, for example) which may result in serious consequences and failure of treatment.

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Indications. Orinase is most likely to benefit the patient in whom the diabetes is relatively mild and stable, is not adequately controlled by dietary restrictions alone, and developed sometime after the age of 30 years.

Contraindications. Orinase is contraindicated in patients with 1) diabetes of the types known variously as juvenile, growth-onset, unstable, or brittle; 2) a history of diabetic coma; 3) diabetes complicated by ketosis, acidosis, coma, fever, severe trauma, gangrene, Raynaud's disease, or serious impairment of renal or thyroid function; 4) hepatic dysfunction; and 5) diabetes adequately controlled by dietary restriction.

Effects. In patients with a satisfactory response to Orinase, the blood sugar falls, glycosuria diminishes, and such symptoms as pruritus, polyuria, and polyphagia disappear. It is *not* a substitute for insulin. And it requires the same adherence to basic principles of diabetes control as does insulin, e.g., dietary regulation; tests for glycosuria and ketonuria; hygiene; exercise; instruction of the patient to recognize and counteract impending hypoglycemia, to follow rigidly directions regarding diet and continuing use of the drug and to report immediately to the physician any feeling of illness. Extreme care must be taken during the transition period to avoid ketosis, acidosis, and coma.

Side effects. To date, the most serious side effect is hypoglycemia, which may occur occasionally and is most likely to occur during the transition period from insulin to Orinase. Other untoward reactions to Orinase are rare, usually of a nonserious nature, and tend to disappear on adjustment of dosage, e.g., gastrointestinal disturbances, headache, variable allergic skin manifestations, and alcohol intolerance.

Clinical toxicity. Aside from an occasional hypoglycemia, Orinase appears to be remarkably free of gross clinical toxicity. There is no evidence of crystalluria or other untoward effects on renal function, or of hepatotoxicity. Except for a rare leukopenia of mild degree, which has been reversible (in some instances, even under continued therapy), there have been no adverse effects on hematopoietic function.

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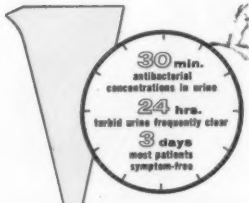
"Approximately one-half of the patients have some permanent damage to the urinary tract."[1]



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SUPPLIED: Tablets, 50 and 100 mg. Oral Suspension (25 mg. per 5 cc. tsp.).

REFERENCES: 1. Rives, H. F.: Texas J. M. **52**:224, 1956. 2. Diggs, E. S.; Prevost, E. C., and Valderas, J. G.: Am. J. Obst. **71**:399, 1956. 3. MacLeod, P. F., et al.: Internat. Rec. Med. **169**:561, 1956.

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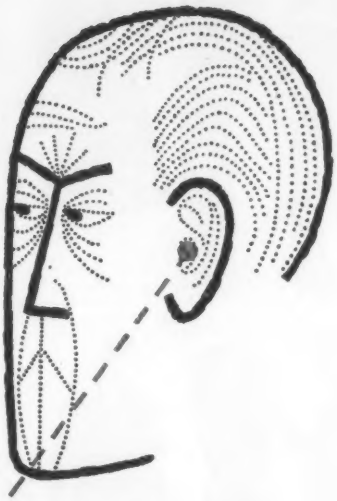

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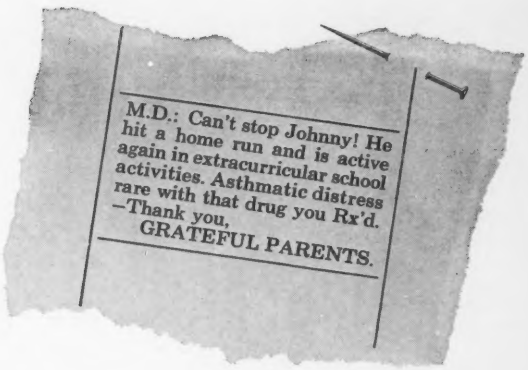
M.D.: Can't stop Johnny! He hit a home run and is active again in extracurricular school activities. Asthmatic distress rare with that drug you Rx'd.
—Thank you,
GRATEFUL PARENTS.

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Most active corticoid; minimal disturbance of electrolyte balance. White, scored 5 mg. tablets (bottles of 20 and 100) and pink, scored 1 mg. tablets (bottles of 100).

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relaxes both mind and muscle

for anxiety and tension in everyday practice

- well suited for prolonged therapy
- well tolerated, relatively nontoxic
- no blood dyscrasias, liver toxicity, Parkinson-like syndrome or nasal stuffiness
- chemically unrelated to phenothiazine compounds and rauwolfia derivatives
- orally effective within 30 minutes for a period of 6 hours

For treatment of **anxiety and tension states and muscle spasm**

THE ORIGINAL MEPROBAMATE

Miltown®

2-methyl-2-n-propyl-1,3-propanediol dicarbamate—U. S. Patent 2,724,720

Tranquilizer with muscle-relaxant action

NOW IN 2 CONVENIENT DOSAGES

NEW 200 mg. SUGAR-COATED TABLETS

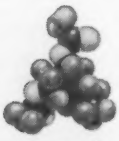
STANDARD 400 mg. SCORED TABLETS

DISCOVERED AND INTRODUCED BY WALLACE LABORATORIES, *New Brunswick, N. J.*

SUPPLIED : *400 mg. scored tablets*
200 mg. sugar-coated tablets

USUAL DOSAGE : *One or two 400 mg. tablets t.i.d.*

Literature and Samples Available on Request



THE MILTOWN® MEPROBAMATE MOLECULE

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with EPINEPHRINE 1:100,000
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with EPINEPHRINE 1:100,000
with EPINEPHRINE
to try it .....
100 cc. Vial
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HYDROCHLORIDE 1%
(BRAND OF LIDOCAINE HYDROCHLORIDE)
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AN AQUEOUS SOLUTION
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fastest acting local anesthetic—as safe as it is effective

How safe is Xylocaine? In five years, over 500,000,000 injections of Xylocaine HCl Solution have been given. "The apparent clinical safety of Xylocaine is gratifying, for without this quality, its additional properties would not warrant an enthusiastic report. Nor would safety alone call for a high recommendation unless additional desirable properties were to be found. The truth of the matter is, however, that Xylocaine approaches the ideal drug more closely than any other local anesthetic agent we have today."*

How effective is Xylocaine? Xylocaine HCl Solution produces more rapid, complete, and deeper anesthesia than other local anesthetics used in equivalent doses. By infiltration, Xylocaine gives a wide area of analgesia, and surrounding tissues are also anesthetized. The long duration of Xylocaine action reduces the need for additional injections. At the same time, it assures greater comfort for a longer period—often when it's needed most.

How does Xylocaine fit into my practice? Xylocaine is the ideal agent for *local infiltration anesthesia* because it is safe, fast acting and of long duration. It is used routinely in daily practice for countless minor surgical procedures such as closure of lacerations, removal of cysts, moles, warts; treatment of abscesses; and in reduction of fractures.

...is to use

XYLOCAINE®

It has also become the choice of many physicians for *therapeutic interruption of nerve function by temporary nerve blocks* in herpes zoster, subdeltoid bursitis, fibrositis, myalgia of shoulder muscles, periarthritis due to trauma, and painful postoperative scars. The relief of pain in these conditions at times appears to be the most important part of treatment.

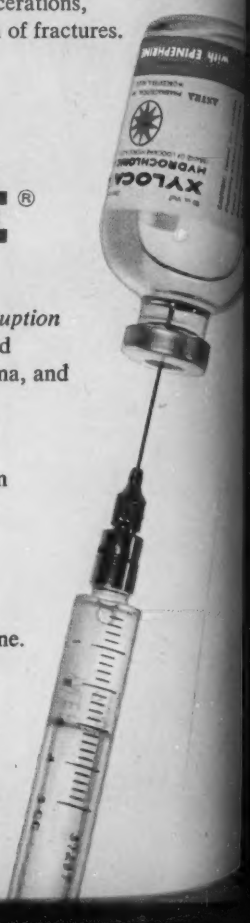
The remarkable *topical anesthetic* properties of Xylocaine HCl Solution further enhance its usefulness for minor operations. Topical anesthesia can be obtained by spraying, by applying packs, by swabbing, or by instilling the solution into a cavity or on a surface.

Xylocaine HCl Solutions are available in 2 cc. ampuls, 20 cc. and 50 cc. vials in strengths of 0.5%, 1% and 2%, with or without epinephrine.

Bibliography of approximately 300 Xylocaine references upon request.

*Southworth, J. L., and Dabbs, C. H.: Xylocaine: a superior agent for conduction anesthesia, Anesth. & Analg. *32*:159 (May-June) 1953.

Astra Pharmaceutical Products, Inc., Worcester 6, Mass.



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simple, effective conception control
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PRECEPTIN®
vaginal gel

High solubility of "Thiosulfil" insures prompt bacteriostatic concentrations at site of urinary tract infections

direct/effective

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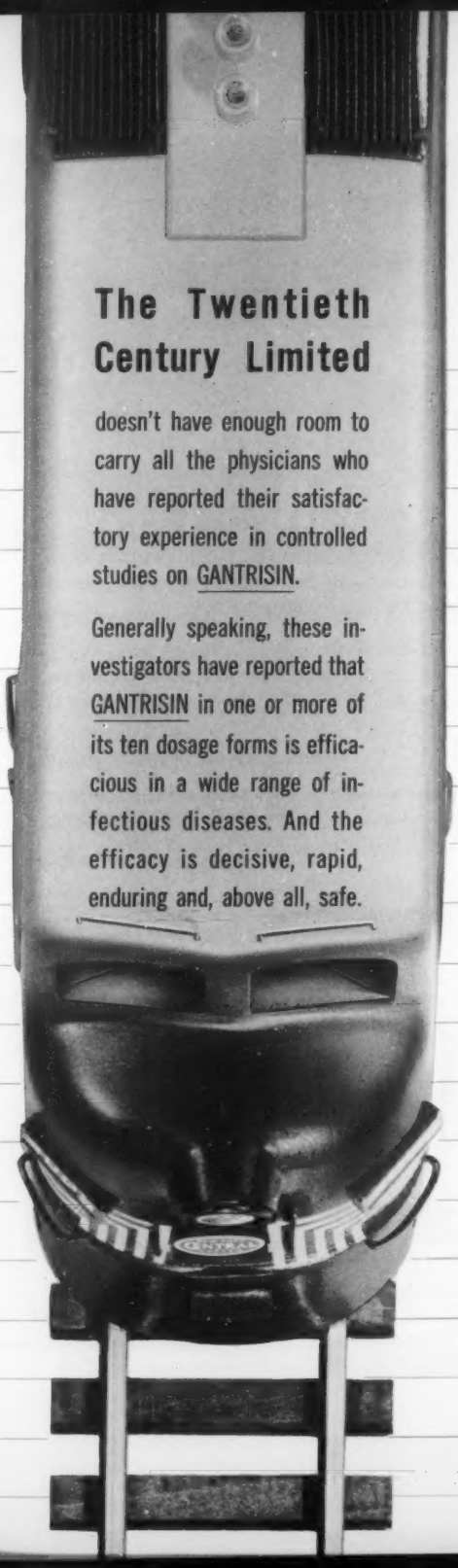


The Twentieth Century Limited

doesn't have enough room to carry all the physicians who have reported their satisfactory experience in controlled studies on GANTRISIN.

Generally speaking, these investigators have reported that GANTRISIN in one or more of its ten dosage forms is efficacious in a wide range of infectious diseases. And the efficacy is decisive, rapid, enduring and, above all, safe.

Gantrisin
with a plus

Azo Gantrisin

in urinary tract infections

AZO GANTRISIN 'ROCHE'

prompt, specific action against pain

and infection . . . in one tablet

ACTION:
Azo Gantrisin is an antibacterial-analgesic agent specifically designed for treatment of urinary tract infections. The high plasma and urine levels of Gantrisin act systemically and locally to clear both descending and ascending infections. Painful burning, urgency and nocturia are relieved – often within 2 hours – by the analgesic action of phenylazo-diamino-pyridine HCl upon the mucosa of the lower urinary tract.

USES:
For antibacterial therapy and local pain relief in urinary tract infections; prevention of infection after cystoscopy, catheterization and other instrumentation. Also useful after urologic surgery.

ADVANTAGES:
Wide antibacterial spectrum . . . high plasma levels . . . high urine levels . . . high solubility (even in acid urine) . . . no need for alkalies . . . no likelihood of renal blocking . . . local pain relief.

DOSAGE:
Adults (and children over 100 lbs) – 2 tablets, q.i.d.
Children under 100 lbs – 1 tablet, q.i.d.

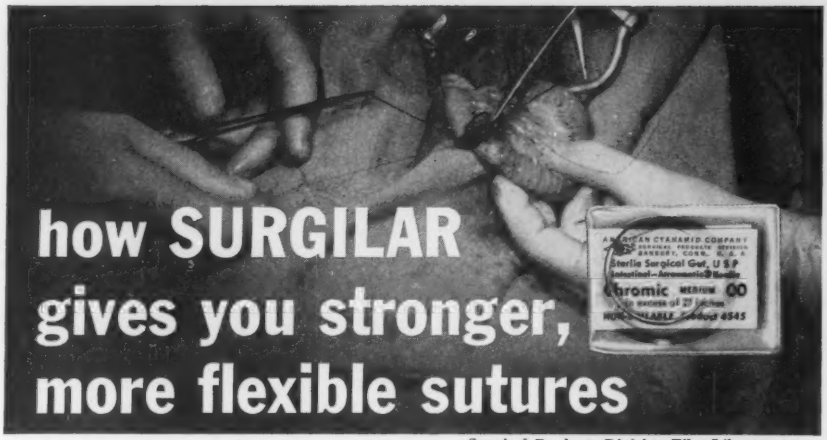
Caution: The usual precautions in sulfonamide therapy should be observed. Because Azo Gantrisin contains phenylazo-diamino-pyridine HCl, it is contraindicated in glomerular nephritis, pyelonephritis of pregnancy with gastrointestinal symptoms, severe hepatitis and uremia. In such cases, Gantrisin should be used alone.

SUPPLIED:
Red, monogrammed tablets, each containing 0.5 Gm Gantrisin plus 50 mg phenylazo-diamino-pyridine HCl; bottles of 100 and 500 tablets.

Gantrisin®– brand of sulfisoxazole

ROCHE

HOFFMANN - LA ROCHE INC • NUTLEY • N. J.



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eliminates glass damage . . . ends excessive handling[1]

No nicked sutures . . . no glass slivers . . . no punctured gloves. SURGILAR has no reel to cause kinks and bends . . . *loose-coil* gut gets much less handling, is noticeably more flexible. Envelope may be easily opened as needed so suture can't dry out. Jar solution is nonirritating.

saves 33⅓% nurse time[1]

Faster handling frees her for other duties . . . new nurses learn simple SURGILAR technic in minutes.

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Less accidental breakage . . . fewer sutures opened per operation . . . takes 50% less storage space . . . *costs no more than tubes.*

1. Alexander, Edythe L.: Mod. Hosp., May, 1957.

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Write for new catalog of *hospital-tested* products

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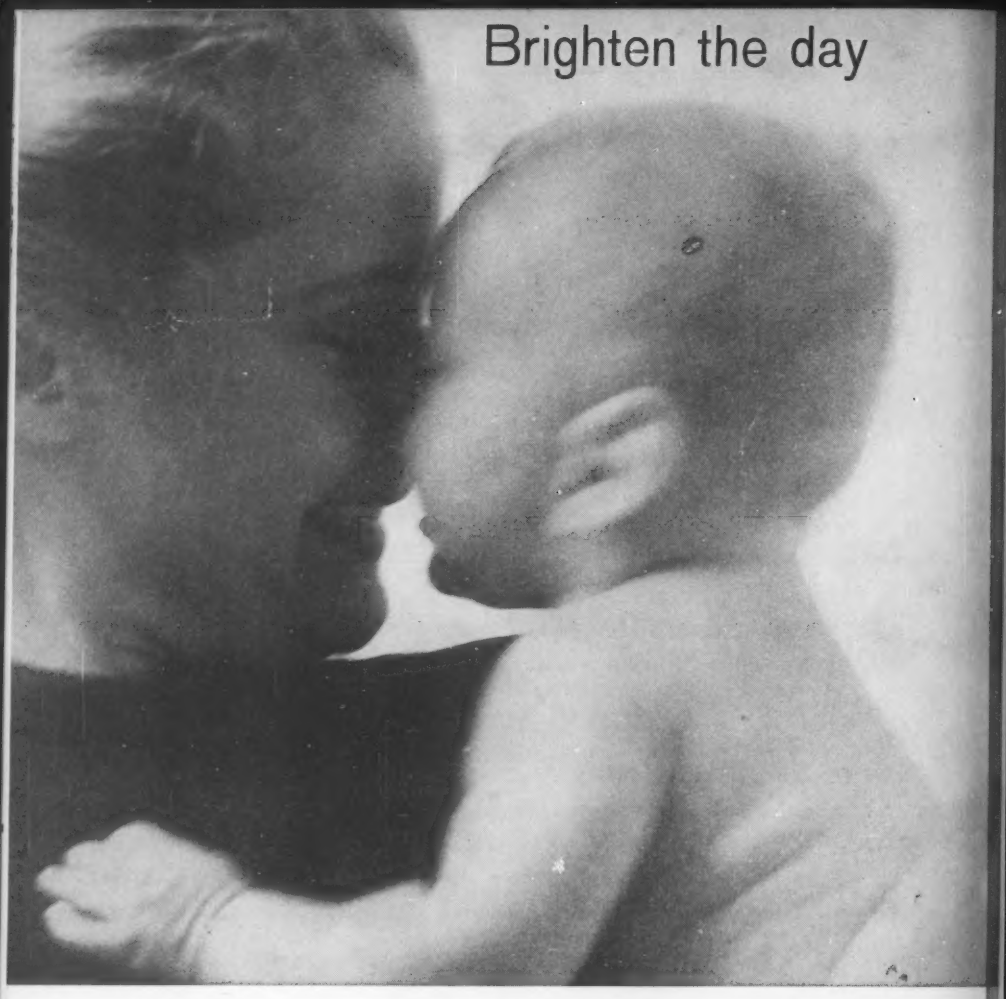

for the chronically fatigued, the chronically ill, the convalescent, the apathetic and depressed older patient, the postpartum patient, the oversedated, the retarded child

with **Ritalin®** hydrochloride

(methylphenidate hydrochloride CIBA)

a new *mild* antidepressant, chemically unrelated to the amphetamines. Ritalin brightens outlook and renews vigor—counteracts drug sedative effects—often improves performance in the elderly. In most cases, Ritalin does not overstimulate, has little or no effect on appetite, blood pressure or pulse rate.

Average dosage: 10 mg. b.i.d. [illegible]

Supplied: TABLETS, 5 mg. (yellow), 10 [illegible] (light blue), 20 mg. (peach colored).

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